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ROYAL BOTANIC GARDENS, KEW

VIII — THE PLANT FORMATIONS OF WESTERN BRITISH SOMALILAND AND THE HARAR PROVINCE OF ABYSSINIA.

J. B. Gillett.

When the boundary between British Somaliland and Ethiopia was being demarcated in 1931, Kew was invited by the Colonial Office to send a botanist to be attached to the Boundary Commission. Thanks to the existence at that time of the Empire Marketing Board's Grant to Kew, it was possible to take advantage of this valuable invitation, and Mr. J. B. Gillett, then a scholar of King's College, Cambridge, was appointed botanist with the Commission (see Kew Bull. Annual Review, 1932, p. 4, and 1933, p. 4).

Unfortunately, there has been a long delay in working out the extensive collections made by Mr. Gillett, which he was unable to do himself owing to other duties; the work, therefore, had to be carried out by members of the African Section of the Herbarium Staff, when time could be spared from their normal work on the numerous collections then being received from West Tropical Africa. With the conclusion of the "Flora of West Tropical Africa" in 1936, it was possible to complete the identification and enumeration of Mr. Gillett's collection and to write the full account.

Owing to the outbreak of the war and Government restrictions on printing, the publication of the paper has suffered further delay, but now with the recovery of British Somaliland and the restoration of Ethiopian sovereignty, we are fortunate in being able to publish Mr. Gillett's valuable contribution to the Flora of Somaliland and the adjacent regions of Abyssinia.

A. W. H.

Setting and Physiography.

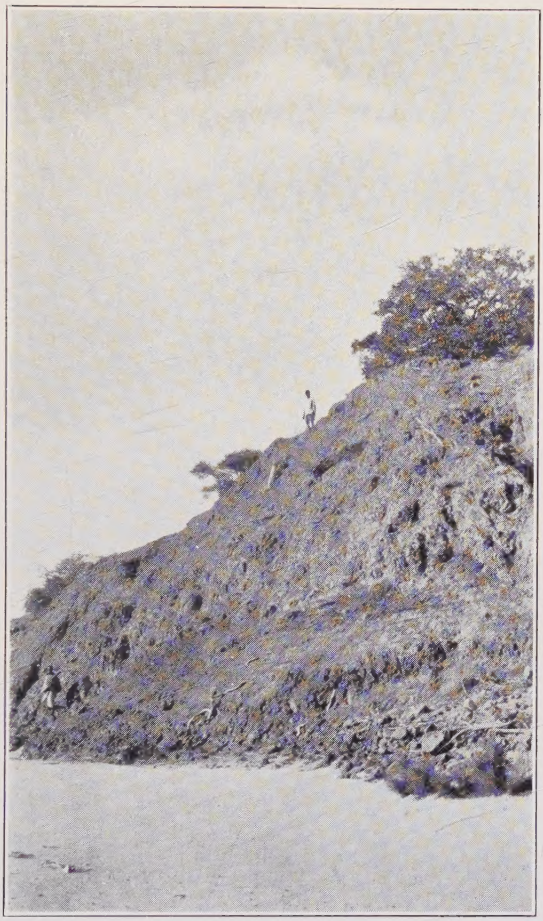
The area dealt with lies between 41° 30′ and 45° 30′ E. and 8° 30′ and 11° 30′ N. It includes five topographic regions:— (1) the Gulf of Aden coastal plain, or Guban, 40 to 110 kilometres in width, broken in places by hills and small mountains, usually representing faulted-down blocks of the plateau; (2) the mountains forming the margin of the plateau from 1,200 to 1,800 m. high. These are much broken up by river valleys running down from the watershed, some 40 to 80 kilometres behind the edge of the plateau; (3) the high part of the plateau including the watershed and the area between this and the edge of the plateau, known in parts as Ogo; (4) the great plains sloping gently down to the south of the

watershed and known as the Haud ; (5) the mountainous plateau in the south-west, around Harar, the highest parts of which reach 3,300 m.

Geology.

In the Guban, Ogo and the Harar massif a basis of archaean schists, granites and gneiss is partly exposed and partly covered by limestone or sandstone, the limestone being Jurassic in the west

PLATE I.



The sub-desert formation at Biyu Anot, 42° 42′ E., 10° 32′ N. 750 m. *Dobera glabra** on the right. The "tug," whose sandy bed is seen in the foreground, by cutting into its banks, has exposed the roots of the Garas. These had penetrated the soft lava rock as far as where the lower Somali is standing, some 12 m. below the bush. Here where they reach the water in the bed of the tug one was still 7 cm. and another 5·5 cm. in diameter. This illustrates how such trees and bushes as are found in the sub-desert are dependent on underground water, often at considerable depths.

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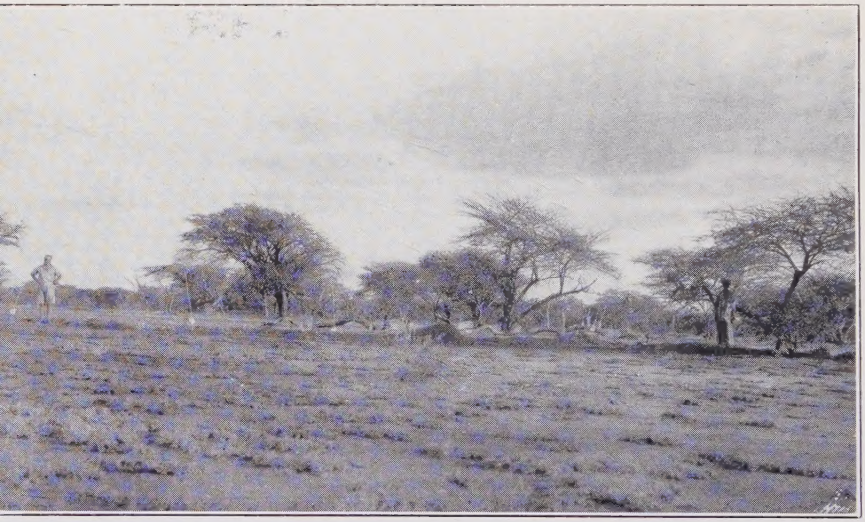
PLATE II.

1. *Commiphora—bush Acacia open scrub formation* at Afard, 10° 10′ N., 44° 8′ E., 500 m., *Commiphora cuspidata**, a tufted grass, *Cymbopogon Schoenanthus*, and in the background *Acacia somalensis**.



2. *Tree Acacia open woodland formation. Acacia Bussei* Harms* association in the "Haud," British Somaliland–Abyssinian boundary at Pillar 105, 44° 10′ E., 8° 57′ N., 4,200 ft.

All the trees are *A. Bussei**, the grass in the foreground is *Sporobolus variegatus**. A root of the tree at the extreme right, by the Somali, has been excavated. Keeping about 15 cm. below the surface it reaches as far as the Englishman at the left of the picture, a distance of 18 m. Thus the open spaces in this association are, below the ground, occupied by a network of *Acacia* roots.

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and Eocene in the east. In the Haud the limestone is continuous. In places in the Guban and along the edge of the plateau lava-flows occur. Many parts of the Guban are covered by alluvium.

Climate.

There is a double rainy season over the greater part of the area, one rainy period being about May and another about August. In addition in the Guban and the coastal mountains a more or less regular winter rainfall occurs. The rainfall is scanty everywhere except in the Harar massif and a few small parts of the coastal mountains. Such weather records as are available are referred to in more detail in the accounts of the different plant formations.

The Plant Formations.

The following seven plant formations, in Clements' sense of the word, occur :—(1) Subdesert ; (2) Commiphora—bush Acacia open deciduous scrub ; (3) Tree Acacia open woodland ; (4) Tree Commiphora—Acacia—Combretaceae deciduous scrub ; (5) Evergreen scrub ; (6) Evergreen forest ; and (7) Erica thickets. The areas occupied by these formations so far as they were ascertained are shown on the accompanying map.

1. The Subdesert.

The vegetation is composed of scattered, dwarf, woody plants less than half a metre high with small, usually hairy leaves, and scattered, tufted, grasses. Trees and bushes are found only beside watercourses, or where there is underground drainage water. The plants, although very openly spaced above ground, form a closed network of roots below and no such complete absence of vegetation occurs as in a true desert.

This formation seems comparable with the vegetation of the coastal plain in eastern British Somaliland, and perhaps with that of sandy soil in the Hormo district (10° 33′ N. by 48° 59′ E.) described by Collenette (31).

The area occupied lies along the coast up to an altitude of about 150 m. and on the 900 m. plateau crossed by the railway from Diredowa to Jibuti.

Environment.—Rainfall : records for two stations, Berbera and Zeilah, are available. At Berbera the average rainfall over 11 years was 51·7 mm. and at Zeilah over 7 years, 127·75 mm. In this period the minimum annual rainfall was 9·3 mm. at Berbera and 16·6 mm. at Zeilah. One year in three has a rainfall of under 25·4 mm. at Berbera and under 50·8 mm. at Zeilah. Most of the rain falls in winter or early spring in showers. On an average there are 6 months in the year at Berbera without a trace of rain and at Zeilah 5, while in some years there may be 8 or 9 months

without rain. Probably of very great importance for the establishment of seedlings are occasional unusually rainy years. In 1926, for instance, 166 mm. of rain fell at Berbera and 273·5 mm. at Zeilah, only 3 months being without rain at Berbera and 2 at Zeilah.

Temperatures : The absolute annual shade maxima are between 41° C. and 49° C. and the minima from 10° C. to 16° C. The average mean monthly maximum is about 33·5° C. Of course in the more elevated parts of this formation lower temperatures may be expected.

The soils here are either pale sands or grey and powdery. The six samples examined were all rich in lime and strongly alkaline. In many places accumulations of chlorides or of gypsum and sodium salts occur. The presence of these salts certainly exerts a strong influence on the vegetation and accounts for some strange phenomena. For instance at Berbera imported trees grown under irrigation sometimes die after the rare heavy rainstorms. This is probably because the storm raises the level of the saline ground water so that it kills the roots of the trees.

Communities within the subdesert formation.—These may be distinguished according to the following habitats :—(1) eluvial soil, not deep sand ; (2) deep sand ; (3) places where ground water is available ; (4) places where salts accumulate — Halosere ; (5) Hydrosere.

(1) On eluvial soil other than deep sand, the dominant plants are woody herbs usually between 10 and 50 cm. tall, with smallish hairy leaves, and scattered at intervals of a metre or more. Such are *Aerva tomentosa* Forssk.*, *Jatropha glandulosa* Vahl. and *Farsetia longisiliqua* Decne. Between these are scattered tufted grasses and small woody dicotyledons. The absence or great scarcity of succulents is noteworthy. Among the grasses and sedges are *Aristida* sp. (4664)†, *Enneapogon* sp. (4665), *Aristida abnormis* Chiov., *Aristida mutabilis* Trin. and Rupr., *Aristida* sp. (4750) and *Cyperus conglomeratus* Rottb.

(2) On deep sand occur almost pure societies of the chamaephytic grasses, *Eragrostis hararensis* Chiov.* or *Panicum turgidum* Forssk.* Sometimes the two occur together. They are from 10 to 40 cm. tall and occur at intervals of 40 cm. or more. Their numerous fine roots, which spread in all directions for 50–90 cm., bind the sand.

In slight depressions, whether on sand or other soil, where storm water collects and runs off, suffruticose *Indigoferae* and other plants with deep tap roots are very prominent ; such are *Indigofera Ruspoli* Bak. f.*, *Cucumis prophetarum* L., *Crotalaria dumosa* Franch., *Indigofera arabica* Jaub. & Spach, *Indigofera spinosa* Forssk., *Crotalaria aegyptiaca* Benth., *Pavonia Sennii* Chiov.,

* An asterisk indicates the species has a native name ; to save space and repetition these have been listed at the end with the scientific names to which they belong (see p. 74) ; for the same reason the botanical authority is given only once.

† The numbers in brackets are the author's collecting numbers.

Dipterygium glaucum Decne, *Tephrosia purpurea* Pers., *T. uniflora* Pers., and *Convolvulus Hystrix* Vahl. In the dry season these deeply-rooted species are conspicuously greener than the grasses around them.

(3) A feature of the subdesert are the alluvial fans in which the "tugs"† from the interior spread out and disappear. In these and in adjacent deep-soiled plains ground-water is within reach of deeply-rooted species, at any rate at certain seasons. *Balanites orbicularis* Sprague* and *Maerua somalensis* Pax* in the west, and *Zygophyllum Hildebrandtii* Engl.* in the east are the principal of these. These three species are all evergreen and deeply rooted. The roots of a 2·75 m. bush of *Dobera glabra* Juss.* in the subdesert were seen penetrating 12 m. of soft lava and reaching a sandy river bed where they were still over 5 cm. in diameter. In between the very scattered individuals of these species the herbaceous vegetation is usually much the same as where ground-water is lacking. In parts where ground-water is more plentiful Acacias occur as well as these evergreen trees. *Acacia spirocarpa* Hochst.* and *A.* sp. near *Bussei* Harms* are the chief. Here the herbaceous vegetation is usually richer; geophytes such as *Littonia obscura* Baker, *Scilla carunculifera* Chiov. and *Steinheilia radians* (Forssk.) Decne, are especially common, though they may also be found elsewhere.

If it is to be supposed that these trees depend on underground water, the problem of how their seedlings become established must be solved. The exceptional rainy years which occur in this formation probably play a part, and it is not unlikely that the burrowing rodents, which abound in these parts, may carry the fruits down into their burrows, where those which escaped being eaten would start life in a much more favourable position than the arid surface soil. Phillips (29) mentions that the seeds of *Balanites* are dispersed by fruit-eating mammals. A small thicket of young *B. orbicularis** trees which was observed near Elmis might have sprung from an abandoned cache of the fruits made by some burrowing rodent.

The diverse effects of wind erosion on the grasses and the *Indigoferae* in this community are worth mention. The grasses rarely have the sand blown away beneath them, as their numerous fibrous surface roots bind it, and they form low hillocks. The tap roots of the *Indigoferae* afford no such protection, and nothing is more common than to see a length of 10, 20 or 30 cm. exposed by the wind. A certain amount of exposure however does not seem to do much damage to the *Indigoferae*, while it kills the grasses.

(4) The Halosere. Owing to its being next to the sea, and to the fact that evaporation very greatly predominates over rainfall, salty places are frequent in the subdesert. On sheltered shores of deep mud, as at Berbera harbour, the shrub *Suaeda fruticosa* Forssk.* is dominant. On deep moist sand the two grasses

† Dry river beds.

Sporobolus spicatus Kunth and *Aeluropus lagopoides* (L.) Chiov. form a close sward. On shallow sand above coral rock *Cyperus conglomeratus* grows in scattered tufts, while on dry deep earth occur scattered shrublets of *Salsola foetida* Del.*

(5) The hydrosere of the subdesert formation may be seen at Biyo anod., 42° 40′ E., 10° 35′ N., where there is a large tug with permanently running water. The sand of the tug bank is fixed by *Panicum turgidum** and *Tamarix nilotica* Ehrenb.*, the latter forming dense groves in which occurs the creeper, *Pentatropis cynanchoides* R. Br. ; where these groves are broken up by heavy grazing, *Calotropis procera* Ait.* is prominent. On ground further above the water and barely flooded, *Acacia spirocarpa* Hochst.*, *Salvadora persica* L.*, *Maerua somalensis**, *Dobera glabra** and *Euphorbia nubica* N.E. Br.* are dominant, forming dense thickets ; creepers are *Cissus rotundifolia* Vahl* and *C. quadrangularis* (L.) Planch.*, while *Sansevieria Ehrenbergii* Schweinf. ex Bak.* is dominant on the ground. The abundance of evergreen and succulent species is noteworthy, also the absence or paucity of any mesophytic ground flora such as is to be seen in similar situations within other formations.

Large tugs at Elmis, 44° 15′ E., 10° 20′ N., without water near the surface during the dry season, were fringed by thickets of *Acacia spirocarpa**, *Ziziphus mauritiana* Lam.*, *Z. Hamur* Engl.*, *Balanites orbicularis**, *Leptadenia Spartum* Wight* and *Acacia Senegal* Willd.* with *Cissus quadrangularis** and *Combretum aculeatum* Vent. as climbers. An absence of mesophytic herbaceous forms was noticeable here also.

As shade temperatures of 43° C. are by no means uncommon in parts of the subdesert, the question of the maximum temperatures which plant tissues can endure is sharply raised in it. Some of the animals inhabiting this area are living dangerously near their upper limit of temperature ; for instance lizards are said often to die of heat upon being confined in a closed space.

Economics.—The subdesert provides a certain amount of grazing for sheep, goats and camels at times when rain has recently fallen.

2. The Commiphora—bush Acacia Open Deciduous Scrub.

The dominant woody plants (except where water is available) are deciduous shrubs, without well-defined trunks and branching from within 1 m. of the ground. They do not exceed 4 m. in height, have small leaves, are usually thorny and resin- or gum-bearing, and often aromatic. The shrubs are spaced well apart so that it is easy to walk between them. Larger trees may occur, scattered at considerable intervals. Between the larger shrubs small ones about 1 m. high occur and the ground vegetation consists of scattered tufts of grass and other plants. On eluvial soils the dominant shrubs are usually species of *Commiphora* and *Acacia*, and on alluvial soils the *Acacia* spp. alone occur.

This formation differs from the *Commiphora*—other species deciduous scrub described by Phillips in Tanganyika Territory in being much more open, in consisting of bushes rather than small trees and in the open scattered nature of the ground vegetation. It seems to be the same as the *Commiphora* community described by Collenette (31) on the northern slopes of the Al hills in eastern British Somaliland, between 300 and 900 m.

The area occupied lies firstly in the south-eastern Haud below about 1,000 m., and secondly in the coastal plain and the lower slopes of the coastal mountains above the subdesert and below about 850 m. This second area becomes very narrow in the extreme west owing to the great extent of the subdesert here.

Environment.—No meteorological data are available. It seems clear that the rainfall is less in total amount and less regular than that of the tree *Acacia* open woodland, while greater than that of the subdesert. On the other hand the dry season, certainly in the northern area, and probably in the south-east, is interrupted by occasional rains in January and December. The average temperature is certainly higher than in the tree *Acacia* open woodland so that there will be an even greater preponderance of evaporation over precipitation.

Soils are red, fawn, whitish or light grey and usually contain a high proportion of sand. Deep soils only develop on flat ground as the vegetation is insufficient to prevent their being washed away on slopes, which are therefore always stony or rocky with mere pockets of soil ; ten samples were all strongly alkaline even though some were developed from rocks containing no lime. Travertine is usually much less developed than in the tree *Acacia* open woodland but is very prominent where there is ground-water. Organic carbon contents of ·088 per cent. and ·296 per cent. were found.

The distinction between limestone and non-calcareous rocks seems to make little or no difference to the vegetation in this formation, no doubt because of the absence of leaching and the fact that drainage is always adequate. Salts may accumulate locally in the same way as in the subdesert formation, but less frequently.

Communities within the Commiphora—bush Acacia open scrub formation.—The chief communities are :—(1) the climax on eluvial soils ; (2) the climax on alluvial soils ; (3) hydroseral ; (4) overgrazed sub-climax areas ; (5) *Rhigozum somalense* Hall. f.* scrub ; (6) a type occurring in the least arid part of the formation on the slopes of the coastal mountains.

(1) *The climax open scrub on eluvial soils.*—The most prominent plants are species of *Commiphora* with their thick, smooth-barked, sappy, strangely contorted branches. Acacias are usually more numerous than the Commiphoras though often less conspicuous. In one area of 500 sq. m. there were 45 of the larger bushes 1–3 m.

tall, of which 7 belonged to 3 species of *Commiphora*, 17 to 3 species of *Acacia*, and 20 to 2 other species. These shaded (of course very lightly) approximately $\frac{1}{4}$ of the area. This seems to be about the average proportion shaded. In the same area there were 76 shrublets under 1 m. high, about $\frac{1}{5}$th of them being small individuals of the species already mentioned and the others belonging to 9 other species. Here there were, in 1 sq. m., 4 tufts of grass and 8 other herbaceous plants. The bushes possess an extensive superficial root system so that rain falling on the open ground between them can be utilised. For instance a small individual of *Commiphora cuspidata* Chiov.*, 1·2 m. high, was found to have roots spreading, between 15 and 35 cm. from the surface, to 8·5 m. distance. The components of the climax scrub differ widely from place to place and in particular those in the Haud are different from those in the north.

The few real trees, which occur widely scattered, are *Acacia spirocarpa**, *Balanites aegyptiaca* Del.* and *Delonix elata* (L.) Gamble*, the latter alone occurring in the Haud. In the north the chief larger bushes are *Commiphora cuspidata* Chiov.* and *C. myrrha* var. *molmol* Engl., *Acacia Asak* Willd.* and *A. somalensis* Vatke*, *Premna resinosa* Schauer, *Rhigozum somalense**, *Euphorbia cuneata* Vahl, and *Euphorbia Thi* Schweinf., the largest succulent in the association. Other bushes are *Commiphora Opobalsamum* var. *induta* Sprague, *Commiphora crenulata* (A. Ven.) Chiov., *C. Gowlello* Sprague, *C. tubuk* Sprague, *C. rostrata* Engl., *C. erythraea* Engl.*, *Acacia mellifera* Benth.*, *Caesalpinia erianthera* Chiov., *Jatropha spinosa* var. *somalensis* Pax, *Cadaba longifolia* DC.

In the Haud the chief bushes are *Commiphora erythraea*, *C. samharensis* Sprague, *C. obovata* Chiov., *C. Playfairii* Hook., *C. crenulata*, *C. crenato-lobata* Chiov., *C. Gowlello*, *C. resiniflua* Martelli, *C. ancistrophora* Chiov., *C. flaviflora* Engl., *Lannea triphylla* Engl., *Iphiona rotundifolia* Oliv., *Sesamothamnus Smithii* Baker, *Dalbergia commiphoroides* Bak. f., *Caesalpinia Gillettii* Hutch. & E. A. Bruce, *Sarcostemma viminale* R. Br., *Boswellia Bricchettii* Chiov., *Grewia* sp. (4215).

Of the small shrubs, in the north the chief are *Grewia tenax* (Forssk.) Fiori*, *Iphiona rotundifolia**, *Croton Cliffordii* Hutch. et Bruce* and *C. somalensis* Vatke & Pax, *Tephrosia obbiadensis* Chiov. Others are *Adenia veneata* Forssk.*, *Adenium somalense* Balf. f. (not common but very conspicuous), *Cadaba glandulosa* Forssk.*, *Solanum* sp. (4279), *Jatropha spinosa* var. *somalensis* Pax, *Farsetia longisiliqua* Decne, *Cienfuegosia Ellenbeckii* Gurke.

In the Haud the main shrublets are the tall grass *Andropogon cyrtocladus* Stapf*, *Jatropha parvifolia* Chiov., *Ipomoea Donaldsonii* Rendle, *Adenium somalense* var. *crispum* Chiov., *Lycium europeum* L., *Hildebrandtia somalensis* Engl., *Blepharispermum fruticosum* Klatt, *Cephalocroton cordofanus* Hochst., *Adenia venenata* Forssk., *Iphiona rotundifolia*.

Some of the chief herbs in the north are :—*Cymbopogon Schoenanthus* Spreng.*, *Blepharis edulis* (Forssk.) Pers., *Oldenlandia rotata* Baker, *Boerhaavia elegans* Choisy, *Indigofera Ruspoli** ; others are :—*Sericostoma albidum* Franch., *Boerhaavia repens* L., *Neuracanthus* sp. (4477), *Chrysopogon Aucheri* Stapf var. *quinqueplumis* Stapf*, *Barleria acanthoides* Vahl, and the succulents :—*Aloe trichosantha* Berger*, *Portulaca Wightiana* Wall., *Caralluma Edithae* N.E. Br., *Euphorbia longetuberculosa* Hochst., *E. nigrispina* N.E. Br., *E. triaculeata* Forssk. In the Haud, *Sporobolus Ruspolianus* Chiov., *Ceropegia subaphylla* K. Schum., *Raphanocarpus Stefaninii* Chiov., *Sarcostemma viminale*, *Indigofera Ruspoli**, *Dorstenia crispa* Engl. and *Vernonia cinerascens* Sch. Bip. are some of the more important herbs.

(2) *The climax bush Acacia community on alluvial soils.*—In the Haud this community occurs in the very slight depressions which alternate on the surface of the plain with equally slight ridges, the latter being covered by the *Commiphora*-bush Acacia open scrub. The alternation between the two communities is very striking, as the plain seems as nearly uniform as it is possible to imagine. In the north scattered *Balanites orbicularis** and *B. aegyptiaca** occur ; in the Haud trees are wholly absent. The *Acacia* bushes are dense, 1–2 m. high, and flat-topped. In the north the dominants are *Acacia Sieberiana* DC* on sand and *A.* sp. ? nr. *Bussei** (4172 and 4742) on other soils. In the Haud *A. misera* Vatke* is dominant, *A. Senegal**, *A.* sp. ? nr. *Bussei** (4172), *A. Sieberiana**, and *A. mellifera** also occur, but much less often. Frequently large areas are covered by unbroken stretches of one or other of these Acacias. An occasional larger bush is *Boscia minimifolia* Chiov.* Other shrubs are *Cadaba farinosa* Forssk.*, *Grewia tenax**, *Lycium europeum* in the north, and *Grewia tenax**, *Cordia Gharaf* Ehrenb.*, *Caucanthus edulis* Forssk., *Ehretia obtusifolia* Hochst. ? (4168), *Grewia erythraea* Schweinf., *Maerua sessiliflora* Gilg* in the Haud. In the north *Indigofera Ruspoli** and *Iphiona rotundifolia** are abundant as small woody plants between the Acacias. Grasses and sedges which may be locally dominant among the herbs in the north are *Eragrostis hararensis**, *Cyperus* sp. (4434), *Lasiurus hirsutus* Boiss. forma, *Chrysopogon Aucheri* var. *quinqueplumis**, *Sporobolus variegatus* Stapf*, *Chaetostichium minimum* (Hochst.) C. E. Hubbard, *Dignanthia villosa* C. E. Hubbard, *Enteropogon barbatus* C. E. Hubbard and *Chloris myriostachya* Hochst. Other herbs are *Crinum ornatum* (L. f.) Bury, *Euphorbia nigrispina*, *Ceropegia nuda* Hutch. & E. A. Bruce, *Blepharis edulis*, *Barleria Hochstetteri* Nees, *Corchorus cinerascens* N.E. Br., *Hibiscus micranthus* L., *Indigofera intricata* Boiss., *Eremopogon foveolatus* Stapf, and *Tricholaena teneriffae* Parl. in the north, and *Craterostigma plantaginea* Hochst., *Abutilon molle* Baker, *Cyclocheiton somalense* Oliv., *Sarcostemma viminale*, *Scilla somaliensis* Baker, *Commelina albescens* Hassk., *Coccinea laevigata* Chiov., *Melhania muricata* Balf. f., and *Sericocomposis pallida* Schinz in the Haud.

(3) *The Hydrosere.*—By large tugs having water at or near the surface throughout the year a number of hydroseral communities may be distinguished. In pools are found *Algae* and *Characeae* such as *Chara vulgaris* L. On the moist sandy floors of tugs an annual vegetation consisting of seedlings of *Tamarix nilotica** and such herbs as *Sporobolus spicatus*, *Mollugo Cerviana* Seringe, *Gynandropsis gynandra* (L.) Briq., *Dactyloctenium aegyptium* Beauv., *Datura Metel* L., *Echinochloa colonum* Link, *Farsetia longistyla* Bak., and *Ammannia baccifera* L. springs up. At the margins sand is fixed by grasses less than 1 m. high, of which the most important are *Panicum turgidum**, *Pennisetum dichotomum* Delile and *Sporobolus robustus* Kunth; other plants such as *Indigofera articulata* Gouan, *Chrozophora oblongifolia* (Del.) A. Juss. and *Ricinus communis* L., spring up among the grasses; following these come tall reeds such as *Pergularia Daemia* (Forssk.) Chiov. var. *macrantha* Chiov., *Typha angustifolia* L., *Phragmites communis* Trin. and *Saccharum Ravennae* Murr. One of these species may form a pure associes, or two or three may form a consocies. These give way to thickets dominated by *Tamarix nilotica** in which grasses such as *Coelachyrum stoloniferum* C. E. Hubbard, *Cenchrus setigerus* Vahl, *Sporobolus spicatus* and *S. robustus* form a ground flora; *Phoenix* sp. and *Suaeda fruticosa**, *Sesbania Sesban* (L.) Merrill, and *Cleome scaposa* DC. also occur.

These *Tamarix* thickets give way to a wood dominated by *Acacia spirocarpa**, *Salvadora persica**, *Ziziphus mauritiana**, and in which *Tamarindus indica* L.*, *Ficus Sycomorus* L.*, *Lawsonia inermis* L.* and *Dobera glabra** also occur. This is followed by *Balanites*-bush Acacia scrub in which, besides the *Balanites orbicularis** and *Acacia* sp. ? nr. *Bussei** (4172), *Balanites aegyptiaca** and *Acacia Senegal** occur.

A different course of events is followed where blown sand occurs. Here, after the pioneer grass stage, a scrub of *Maerua somalensis** and *Salvadora persica** is formed, with the grass *Eleusine flagellifera* Nees abundant in open places; this gives way to the Acacia-Salvadora wood. Where the earlier communities are opened up by grazing a grass community with abundant *Calotropis procera** is produced.

Beside tugs which are thoroughly dry for a large part of the year occur tree communities of *Ziziphus mauritiana**, *Acacia spirocarpa** and *Balanites aegyptiaca**, and less commonly *Ziziphus Hamur**, and the shrubs *Leptadenia Spartum** and *Acacia Senegal**.

(4) *Overgrazed Areas.*—Owing to the long dry season and the sporadicity of the rainfall, the Commiphora-bush Acacia formation is usually not heavily grazed throughout the year, and even after the rains some time must elapse before the Somalis can move their flocks and herds to the area affected. However, by large caravan routes and watering places, severe overgrazing takes place and here the shrubs may be eliminated and the herbaceous flora also much

reduced. In this way extensive bare areas are produced, superficially similar to the sub-desert. Grazed-down bushes of *Grewia tenax** especially near gullies, are usually the chief vestiges of the woody vegetation.

(5) *The Rhigozum scrub.* In the lowest parts of the *Commiphora* are other species of open scrub near Mount Elmis, and west of this a very much impoverished scrub occurs, in which *Rhigozum somalense** is dominant, and sometimes the only shrub present; the ground flora is also much reduced. Besides various members of the *Commiphora cuspidata** scrub a few plants were found here which were not seen elsewhere. These were: shrubs, *Caesalpinia* sp. and *Moringa aptera* Gaertn., and the herb *Convolvulus sericophyllus* Anders. This *Rhigozum* scrub might perhaps be treated as part of a distinct association within this formation, adapted to more xerophytic conditions than the other associations. The Binin was not seen east of Berbera, though *Caesalpinia* sp. (4489) and the *Moringa* occur here also.

(6) *The Commiphora erythraea*—Acacia Asak*—Croton open scrub.* On the lower north-facing slopes of the escarpment at altitudes of from 600–900 m. between the typical *Commiphora cuspidata** and shrub *Acacia* communities and the tree *Acacia* formation there occurs, especially on non-calcareous rocks, a special type of the *Commiphora* open scrub in which most of the species typical of the *Commiphora cuspidata** scrub are absent, the dominants being *Commiphora erythraea**, *Acacia Asak**, and *A. mellifera** among the shrubs, and *Croton Cliffordii* Hutch. & E. A. Bruce* and *C. somalensis* Vatke & Pax among the lesser shrubs on eluvial ground, and *Acacia Senegal** on alluvial ground. The eluvial community is very similar to the xeroseral community of the *Acacia Bussei** open woodland association, but there are no signs that it gives way to tree *Acacia* open wood. *Commiphora crassispina* Sprague and *C. Opobalsamum* var. *induta* occur, and *Grewia tenax**, *Premna resinosa* and *Cadaba glandulosa** are common shrubs; not found lower down are *Euphorbia somalensis* Pax* and *E. Robecchii* Pax, *Courbonia virgata* A. Brogn, *Grewia canescens* A. Rich., *Maerua crassifolia* Forssk., *Jatropha Phillipseae* Rendle and *Ochradenus baccatus* Del.; *Euphorbia scoparia* N.E.Br.* is often abundant in river gorges. A common climber is *Psilotrichum gnaphalobryum* (Hochst.) Schinz; characteristic herbs are the grasses *Danthoniopsis barbata* C. E. Hubbard, *Enneapogon cenchroides* C. E. Hubbard, and *Sporobolus* sp. (4537), and the *Acanthaceae, Barleria Hochstetteri, B. acanthoides* forma (4436) and *Ecbolium Anisacanthus* (Schweinf.) C.B.Cl. Of the hydrosere, *Balanites aegyptiaca**, *Acacia spirocarpa** and *Lawsonia inermis** are typical. Over-grazing of *Commiphora erythraea*—Acacia Asak** open scrub eliminates first the *Commiphora* and then the *Acacia*, forming a community with *Croton* as its only woody plant.

The *Commiphora erythraea*—*Acacia Asak*—*Croton* communities do not occur in river valleys, where the lowest part of the tree Acacia formation is the *A. Bussei** association. They are confined to mountain slopes, where they border on the *Acacia glaucophylla**—*A. etbaica**—*Terminalia Brownei* Fres.* association of the tree Acacia formation.

The transition from Commiphora and other species of open scrub to the sub-desert. As has been said, the *Commiphora* open scrub is represented at its lowest limits on Mt. Elmis by a scrub in which *Rhigozum somalense** dominates. At the lower margins of this scrub the bushes are confined to broken ground and the beds of water courses, open patches of sub-desert appearing on level ground. In the scrub are patches where both *Rhigozum somalense** and *Caesalpinia* sp.* (4489) are standing dead, apparently owing to drought, showing that the transition to the sub-desert is here a matter of climate and not of grazing. At Marmar, on the other hand, where *Rhigozum* scrub does not occur, the outlying *Commiphora cuspidata** and *Acacia Asak** bushes were found in water courses and stony ground, and at Elmis there is every evidence that grazing is intense and the presence of scattered *Iphiona rotundifolia** and *Cissus rotundifolia** within the borders of the sub-desert indicate that at least a portion of this is not climax but a grazing sub-climax to *Commiphora* open scrub.

Economics.—The *Commiphora*—bush *Acacia* formation yields various gums and resins of which Myrrh, from *Commiphora cuspidata**, and Gum Arabic, from *Acacia somalensis**, are the chief. It also provides temporary grazing for sheep, goats and camels.

3. Tree Acacia Open Woodland.

The dominants are *Acacia* trees, sometimes adjacent to one another but usually well spaced. They are usually somewhat over 3 m. in height and have clear boles for 1 m. or more above the ground and rather flat umbrella-like crowns. They have a very extensive superficial root system so that although the trees are openly spaced there is a close network of roots a few centimetres below the ground. Beneath and between the trees is a carpet of grasses and dicotyledonous herbs, largely members of the *Acanthaceae*. These form a continuous layer except where, as often happens, they are overgrazed. Small shrubs are often present and perhaps succulents. Aloes are often abundant.

This formation seems to be the same as that described for the Buran district in eastern Somaliland by Collenette (31) and as the thorn scrub of the Sudan by Chipp (30), the thorn scrub belt stretching across West Africa south of the Sahara and the bush veldt of parts of the Transvaal and the Kalahari in South Africa.

It differs from the tree *Acacia* open woodlands of East Africa in that these are successional to deciduous scrub (Phillips (31)), while this is climax.

The tree *Acacia* open woodland is the most extensive formation in the area visited ; it covers the western part of the Haud above 900 m., the Marar prairie, the Ogo plateau and the coastal mountains above 840 m., except their most well-watered portions.

Environment.—Weather records have been kept for some years at 5 places in this formation. The average rainfall over 10 years before 1932 at Sheikh and Hargeisa was 531 mm. and 478 mm. respectively ; at Buramo and Erigavo for 6 years before 1932, 620 mm. and 336 mm., and at Burao for 9 years till 1932, 247 mm. The greatest annual rainfall during this period was in 1926 when these stations had 796 mm., 810 mm., 706 mm., 465 mm. and 312 mm. respectively. The least annual rainfall were 297 mm. 315 mm., 406 mm., 267 mm. and 165 mm. There is a short dry period about July between the two rains and a longer winter dry period of 4–5 months when almost no rain falls at all.

This rainfall is insufficient to maintain permanently flowing streams, the watercourses (tugs) only carry water after storms.

The absolute annual temperature maxima range from about 31° C. at Erigavo (1,700 m.) to 35° C. at Burao (1,030 m.), the absolute annual minima from −2° C. at Erigavo to 17° C. at Burao. Frosts occasionally occur in all the stations except Burao. The highest mean monthly maximum ranges from 26° C. at Erigavo to 20° C. at Burao and the lowest mean monthly minimum from 9° C. at Erigavo to 17° C. at Burao.

Soils in this formation are buff, reddish-buff, grey or yellow loams, usually sandy. They are always alkaline or strongly alkaline (15 samples) with Ph. values of 7·5 to 8·5, even when derived from rocks poor in lime. However, in this formation, at least in its moister parts, the vegetation on limestone differs considerably from that on non-calcareous rocks.

Soil can develop here on moderate slopes as there is sufficient vegetation to retain it ; any steep slopes are, however, rocky. Salts seem to concentrate near the surface of the soil, the surface soil is found to have a higher Ph. value than that lower down, and in a great many places a hard calcareous crust which may be several centimetres thick (travertine) is formed a little below the surface of the soil.

Communities within the tree Acacia open woodland.—This formation is divided into three associations.

(1) The *Acacia Bussei** association on the lower parts of the Ogo plateau and in the Haud.

(2) The *Acacia etbaica* Schweinf.*—*Euphorbia grandis* Lem.* association on the more elevated parts of the Ogo plateau and the Marar prairie.

(3) The *Acacia glaucophylla* Steud.*—*A. etbaica**—*Terminalia Brownei* Fres.*—*Dracaena schizantha* Bak.* association on the coastal mountains.

(1) *The Acacia Bussei** *Association.*—This widespread association seems to flourish under conditions of lower rainfall, higher temperatures and a more severe dry season than the other two *Acacia* open woodland associations. Burao is in this association and has a rainfall of 246 mm. per annum as against 531 mm., 521 mm. and 477 mm. for three stations in the *Acacia etbaica** association. An indication of the drier climate here is the absence of lichens which are common on the north side of trees in the *Acacia etbaica** association and in the *A. glaucophylla**—*Terminalia Brownei**—*Dracaena schizantha** association.

The climax community under the normal heavy grazing consists of *Acacia Bussei** trees from 3 to 8 m. in height, usually in small groups with intervals of as much as 40 m. between them. The superficial root system of the *Acacia* is very extensive ; for instance one small individual 3·5 m. high was found to possess a root reaching, about 15 cm. below the surface, to a distance of 18 m. from the trunk. Thus rain falling in the spaces between the trees is utilised by them. The reason for the occurrence of the trees in groups is probably the difficulty of the seedlings becoming established except where some protection is provided from grazing. The branches of a fallen tree provide such protection in which a group of seedlings may often be seen springing up. These develop into one of the characteristic clumps of mature trees. A somewhat peculiar feature which becomes apparent in an air photo is that these clumps of trees, in the level plain of the Haud, all tend to be elongated, with their long axis pointing always in the same direction.

An area of 12,500 sq. metres of *Acacia Bussei** open woodland was found to be 20 per cent. shaded by trees and to contain 44 trees and big bushes, namely 32 *Acacia Bussei**, 1 *Acacia* nr. *subalata**, 10 *Boscia minimifolia* Chiov.*, 1 *Maerua sessiliflora* Gilg*, and about 30 small bushes, 10 young *A. Bussei**, 13 small *Boscia* and 4 young *Maerua sessiliflora**, and a few *Cadaba farinosa**.

Thus the density of wooded plants is about 1/40th of that in *Commiphora*—bush *Acacia* open scrub. The proportion of the area shaded was not significantly different, being in this case about 20 per cent.

The herbaceous vegetation consists of a fairly close cover of grasses with other plants subordinate, and 1 sq. metre of ground contained 78 grass plants and 9 other plants. Thus the density of herbs is here about 6 times that in the *Commiphora*—bush *Acacia* open scrub. The grasses and other herbs occurring in the shade of the trees differ from those in the open glades between the trees. In the former situation Acanthaceous and other herbs such as

Justicia sp. (4078), and another *Justicia* sp. (4079), *Lycium europeum*, *Vernonia cinerascens*, and a few small semi-woody plants such as *Solanum obbiadense* Chiov. and chamaephytic grasses as *Chrysopogon Aucheri* var. *quinqueplumis** and *Tetrapogon villosus* Desf. prevail, while in the open glades are hemicryptophyte grasses such as *Cenchrus ciliaris* L. and *Sporobolus variegatus** often forming pure societies, with sometimes certain geophytes such as *Glossonema hispidum* Hutch. et E. A. Bruce. Frequently in a now open glade the former position of an *Acacia* is shown by a ring of *Chrysopogon Aucheri* var. *quinqueplumis**.

Besides the species already mentioned the following are also important in this association :—Trees, *Acacia spirocarpa**, *A. mellifera**, *Albizzia* sp.* (4095), *Balanites glabra* Mildbr. and Schlecht.*, undershrubs, *Grewia erythraea*, grasses, *Aristida adscensionis* L., *Sporobolus marginatus* Hochst., *Sporobolus* sp. (4096), *Tetrapogon tenellus* Chiov., *Cenchrus ciliaris* and other herbs, *Polygala obtusissima* Hochst., *Hibiscus somalensis* Franch., *Barleria diffusa* (Oliv.) Lindau, *Solanum carense* Dunal., *Ipomoea cicatricosa* Bak., *Commicarpus plumbagineus* (Cav.), Standl., *Hibiscus Hildebrandtii* Sprague and Hutch., *Ocimum tomentosum* Oliv., *Hydnora abyssinica* A. Braun., *Triplotaxis somalensis* (O. Hoffm.) Hutch., *Portulaca oleracea* L., *Becium knyanum* (Vatke) G. Tayl., *Thesium radicans* Hochst. ex A. Rich., *Justicia* sp. (4315), *Crotalaria dumosa* and *Zygophyllum simplex* L.

Open Grassland.—Open grassland occurs in two situations in the *Acacia Bussei** association, in slight depressions in the Haud, and on the edge of the Ogo plateau just south of the escarpment. *Chrysopogon Aucheri* var. *quinqueplumis** is the dominant grass in both places, in the Haud it may be almost pure, in the north other grasses such as *Paspalidium desertorum* Stapf and *Coelachyrum praeflorum* Chiov. are of almost equal importance. The reasons for the existence of the Haud open grassland are probably somewhat as follows.

The depression in which the open grassland occurs being rather moist, a dense growth of grass is possible ; since there is no permanent water in the vicinity grazing is not sufficiently intense always to keep the grass down, and fires sometimes occur. These kill young trees and damage old ones. The grazing here is unusually good owing to the higher water content and accordingly a large number of Somali Kurias (nomadic parties) are attracted to the area whenever temporary rainwater pools make it possible to get water anywhere near. The Somalis destroy trees for at least five different reasons. Their camels and goats graze on them (this is especially severe on the young trees which are within reach of the goats), they lop off branches to provide grazing for the goats when the grass is dry, they need a large number of these tree branches for Zarebas which, being eaten by termites, have constantly to be renewed, and they strip the bark to make rope, mats, and other

articles, thus frequently killing trees. In a wooded area this destruction of trees is comparatively unimportant, resulting merely in open patches around large Zarebas, but where an open plain has been produced these destructive influences are intensified since the Somalis supported by the entire plain concentrate on the isolated *Acacia* trees which spring up in the plain, and on the trees at the edge of the plain. Thus an unusually large water supply produces, not, as might be expected, a more luxuriant growth of trees, but their suppression. The same general explanation holds for the open grassland on the edge of the escarpment except that since grazing is always too heavy, fire here plays no great part. The extra showers which this area gets keep the grass fresh for much longer than is usual. An unusual number of Somali Kurias are attracted to the neighbourhood and the trees suffer accordingly.

Acacia Bussei Association : Sand Communities.—On Nubian sandstone where the soil consists largely of loose sand the bush *Acacia* (*A. Sieberiana**) is dominant as a shrub below the trees *A. Bussei** and *A. spirocarpa**. *Aloe trichosantha* Berger* and *Croton Cliffordii** or *C. somalensis* Vatke and Pax are also abundant in this community. *Grewia tenax** and *Maerua sessiliflora** also occur, and *Solanum* sp. (4279). It is noteworthy that here the tree Acacias show no grove-glade arrangement, but are rather evenly spaced. This may be due to the protection afforded to young trees by the *Acacia Sieberiana** bushes, which means that no one part of the community is especially favourable for their growth.

*Acacia Bussei** *Association : the Xerosere.*—As might be expected the xerosere of the *Acacia Bussei** Association approaches in some ways the climax community of the *Commiphora*—bush *Acacia* open scrub formation. The chief trees are Acacias, *A. Bussei*, *A. Senegal**, and *A. mellifera**, which are found in both the Haud and the North, and *Delonix elata**, *Commiphora lughensis* Chiov.*, *C. ogadensis* Chiov.*, *Sterculia Rivae* Chiov.* and *Cadaba heterotricha* Stocks.*, which are only found in the north, where the xerosere is much better developed owing to the more broken nature of the country. Among bushes in both the Haud and the North occurs *Grewia tenax**, in the Haud occur also *Commiphora Gowlello*, *C. candidula* Sprague, *C. linearifolia* Chiov. and *Acacia etbaica**, while in the north *Grewia mollis* Juss.*, *G. Schweinfurthii* Burret*, *Euphorbia infausta* N.E. Br.*, *Aloe Rivae* Baker*, *Senecio longiflorus* (DC.) O. and H.*, *Senecio longiflorus* var. *violascens* (A. Berg.), *Sarcostemma viminale* R. Br.*, *Croton Cliffordii** or *C. somalensis*, and on limestone *Periploca ephedriformis* (Defl.) Schweinf. are found. Characteristic herbs in the north are *Caralluma speciosa* N.E. Br.*, *Sansevieria Ehrenbergii*, *Aloe trichosantha** and in the Haud the grass *Andropogon cyrtocladus** which is locally dominant. This grass, which is large and bushy, has most probably been almost entirely grazed out in the north, thus making room for an increase in the *Aloes*, etc., but

survives in the Haud where, owing to the absence of permanent water grazing is less severe.

It is a curious fact that in the xerosere of the *Acacia Bussei** association in the Haud the *Commiphorae* are all undersized, rarely reaching 2 m. in height, whereas in the xerosere of this association in the north the *Commiphorae* reach a size unknown elsewhere; thus individuals of *C. lughensis** reach 6 m. in height and have trunks with a circumference of 1·5 m., while *C. ogadensis** trees reach 5 m. in height and a circumference of ·7 m. These large *Commiphorae* in the north occur on steep rocky slopes and cliffs such as do not occur in the Haud, while the stunted *Commiphorae* of Haud occur on almost level stony ground, on which *Commiphorae* do not occur in the north, probably being grazed out. Probably some of the stony mountain sides in the north may get an unusually high amount of rain through catching moisture-laden winds from the Gulf of Aden, and their vegetation, containing large tree *Commiphorae*, then represents not so much the xerosere of the *Acacia Bussei** association as a transition towards deciduous scrub.

*Acacia Bussei** *Association: Hydrosere.*—The hydroseral communities in this association are intermediate between those in the *Acacia etbaica** association and those in the *Commiphora*—bush *Acacia* formation. The usual pioneer and binding grasses are followed, where there is permanent moisture, by *Typha angustifolia*, *Saccharum Ravennae*, and reed beds with *Phoenix* species. Tamarisk is not very important. The next stage is a *Ziziphus-Acacia spirocarpa** wood which is distinguished from that in the *Acacia etbaica** association by the presence of the trees *Lawsonia inermis**, *Ficus Sycomorus**, *Tamarindus indica** and the liane *Cissus quadrangularis**, while the more open community which follows contains, besides the *Euphorbia nubica** and *Aloe abyssinica* Lam.* characteristic of this stage in the hydrosere of the *Acacia etbaica** association, evergreen thickets of *Salvadora persica** and *Dobera glabra**, abundant *Sansevieria Ehrenbergii** and *Aloe trichosantha** among the succulents and *Berchemia discolor* Hemsl.*, *Balanites aegyptiaca**, *Cordia ovalis* R. Br.* and *Turraea parvifolia* Deflers* among the trees and shrubs.

(2) *The Acacia etbaica** *Association.*—This association is very widespread on the upper parts of the Ogo plateau, mostly above about 4,400 feet.

It contains the following communities:—

(1) The grazing sub-climax open woodland.
(2) Hydroseral communities.
(3) Xeroseral communities.
(4) Open grass plains (fire sub-climax).

Climax (grazing sub-climax) community.—The dominant tree (*Acacia etbaica**) retains its leaves until far into the dry season so that in this respect it is contrasted with the *Acacia Bussei** whose leaves fall off much earlier. On account of the persistence of its

foliage the *Acacia* is much lopped to obtain fodder for stock, and as it responds to this treatment by sending up shoots from ground level the community often comes to consist of bushes rather than trees. The only other important tree is *Euphorbia grandis**, which may be co-dominant on non-calcareous rocks. *Acacia* nr. *subalata** (3948), *Balanites glabra** and *Maerua sessiliflora** also occur and among the shrubs *Cadaba farinosa** and *Euphorbia nubica**. Abundant everywhere and sometimes forming close sheets on deeper soil is the 1 m. high *Aloe abyssinica**. *Cissus rotundifolia** is frequent.

Among the grasses which are always closely grazed *Tetrapogon villosus, Chrysopogon Aucheri* var. *quinqueplumis**, *Eragrostis aulacosperma* Steud. and *Rhynchelytrum villosum* Chiov. are important. Succulents are *Caralluma speciosa* N.E. Br., *Euphorbia turbiniformis* Chiov., *Caralluma Dicapuae* (Chiov.) Chiov., and *Ceropegia* sp. (4234). A great number of dicotyledonous herbs and shrublets under $\frac{1}{2}$ m. occur among the grass; of these the Acanthaceae, *Hypoestes Hildebrandtii**, *Blepharis fruticulosa* C.B. Cl., *B. edulis* and *Barleria proxima* Lindau are especially prominent; also *Ipomoea cicatricosa, Vaupelia heliocharis* (S. Moore) Brand., *Boerhaavia reniformis* Chiov., *Lasiosiphon somalensis* Pearson, *Orthosiphon tenuiflorus* Benth., and *Vernonia cinerascens*. Other herbs are *Barleria parviflora* R. Br. ex T. Anders., *Bouchea sessilifolia* Vatke, *Barleria quadrispina* Lindau, *Lasiosiphon somalensis* var. *glabra* Pearson, *Helichrysum somalense* Bak. f., *Cienfuegosia Welshii* (T. Anders.) Garcke, *Tephrosia simplicifolia* Franch., and *Helichrysum glumaceum* DC.

*The Acacia etbaica** *Association: Hydrosere.*—No permanently wet tugs or pools have been observed in this association. Beside temporary tugs, grasses such as *Panicum turgidum* Forssk., *Aristida adscensionis* L. and *Cymbopogon floccosus* Stapf bind the sand. These are followed by a close wood about 8 m. high, of *Acacia spirocarpa** with occasional large trees of *Ziziphus mauritiana**. This *Acacia spirocarpa** woodland consists of much finer trees than those in the climax community. An average specimen of the *Acacia* has a trunk 2·3 m. in circumference 1 m. above ground level, and reaches 8 or 9 m. in height, while the *Zizyphus* trees which occur scattered among the Acacias reach 20 m. in height. This in turn gives place to an *Acacia—Euphorbia nubica** open woodland of *Acacia spirocarpa**, *A. Bussei**, *Acacia* nr. *subalata** (3948), *A. senegal** and *A. etbaica**, and of *Balanites glabra**, amongst which is a dense growth of *Euphorbia nubica**, *Aloe abyssinica** and other bushes. Where the ground is liable to be water-logged a different succession is followed and a turf of short grasses, such as *Cynodon Dactylon* Pers., is produced under the normal heavy grazing. An example of this near Buramo has been protected for some dozen years from heavy grazing as a Government grazing reserve and here the short grasses are replaced

by others up to 1·8 m. high, in the shelter of which a mixture of *Ziziphus mauritiana** wood, and post-climax *Acokanthera Schimperi* Schweinf.* scrub, seems to be developing.

In the *Ziziphus mauritiana**—*Acacia spirocarpa** wood, the chief creepers are *Commicarpus plumbagineus* and *Cissus rotundifolia**. Species of *Loranthus* are often abundant. Beneath the trees is a rank mesophytic herbaceous vegetation including *Leucas urticifolia* R. Br., *Hypoestes Hildebrandtii**, *Boerhaavia diffusa* Lam., *Panicum maximum* Jacq., *Urochloa panicoides* Beauv., *Chloris virgata* Sw., *Setaria verticillata* Beauv., *Chloris pycnothrix* Trin., *Commelina albescens*, *C. Forskalaei* Vahl., *Hibiscus calycinus* Willd., *Crotalaria laxa* Franch., *Wedelia abyssinica* Vatke, *Abutilon ramosum* Guill. and Perr., *Justicia flava* Vahl., *Sida rhombifolia* L., *Ocimum suave* Willd., *Leucas Jamesii* Bak., *Acalypha fruticosa* Forssk., *Dicliptera verticillata* (Forssk.) Nees, *Monechma debile* (Forssk.) Nees, *Verbena officinalis* L.

In the *Acacia—Euphorbia nubica** open woodland, which succeeds the *Ziziphus mauritiana—Acacia spirocarpa** wood, occur the following shrubs :—*Solanum incanum* L., *Grewia mollis* Juss., *Cadaba farinosa* Forssk.*, *Grewia tenax**, *Ehretia obtusifolia* Hochst., *Grewia villosa* Willd., *Sarcostemma viminale*, *Ceropegia De Vechii* Chiov., and a great variety of herbs such as *Solanum carense*, *Dactyloctenium scindicum* Boiss., *Commicarpus plumbagineus*, *Vernonia amplexicaulis* Baker, *Ocimum americanum* Baker, *Eragrostis aulacosperma*, *Sporobolus marginatus*, *Tragus racemosus* All., *Aerva tomentosa* Forssk., *Diceratella sinuata* (Franch.) Oliv., *Cyphocarpa pallida* C.B. Cl., *Hibiscus Hildebrandtii*, *Ochradenus somalensis* Bak., *Pergularia Daemia*, *Ipomoea obscura* Ker., *Nidorella pedunculata* O. and H., *Salsola Bottae* Boiss., *Pentatropis cynanchoides*, *Sansevieria abyssinica* N.E. Br., *Ruellia discifolia* Oliv., *Justicia aridicola* Rendle, *Pupalia lappacea* Juss., *Cynanchum sarcostemmatoides* K. Sch., *Cucumis dipsaceus* Ehrenb., *Ruellia patula* Jacq., *Ecbolium Anisacanthus*, *Indigofera intricata*, *Ochradenus somalensis*, *Crotalaria albicaulis* Franch., *Melothria* sp. (3962), and *Tragia brevipes* Pax.

Typical of the trees and bushes in these two hydroseral communities are long tap roots which penetrate to underground water. Thus a small individual of *Euphorbia nubica** was noticed with a tap root 2·5 cm. in diameter 4 m. below ground level, while a specimen of *Ziziphus mauritiana** of under medium size was noticed with roots 6 cm. in diameter 7 m. below ground level. *Acacia spirocarpa** also differs from most of the Acacias whose roots were examined in having, besides the usual long spreading horizontal roots just below ground level, a strong central tap root. A small individual of this species had a tap root 6 cm. in diameter 3 m. below ground level.

*The Acacia etbaica** *Association : Communities in the xerosere.* The xerosere of the *Acacia etbaica** open wood may be not very different from the climax community but succulents are

often much more abundant, for instance *Caralluma speciosa* and *Senecio longiflorus** and *S. longiflorus* var. *violascens* A. Berg. (chiefly on non-calcareous soil). *Aloe somaliensis* C. H. Wright*, *A. trichosantha**, *A. abyssinica**, *Acacia Senegal** and *A. Bussei** are frequent. The small bushes *Croton Cliffordii** or *C. somalensis* and *Grewia Schweinfurthii** are also often abundant.

In loose sand, which is rare in this association, *Acacia Sieberiana** occurs.

*The Acacia etbaica** *Association: Open plains.*—In this association is the large open grass tract known as the Marar prairie. Here the soil is deep, the rainfall good, and owing to the lack of permanent water for drinking grazing is less intense than usual. As a result the grass is allowed to grow tall and grass fires occur (observed, February, 1933, and by Burton in 1854), and woody vegetation and Aloes are destroyed. It seems probable that with the advent of more settled conditions and a consequent increase in grazing and diminution in fires *Acacia etbaica** is now encroaching upon this plain, at any rate in its most northern part. Patches of *A. etbaica** may also be seen wherever any broken ground reduces the intensity of the fires.

(3) *The Acacia glaucophylla*—A. etbaica*—Terminalia Brownei*—Dracaena schizantha** *Association.*

This association occupies the northern slopes of the coastal mountains above the *Commiphora*—bush *Acacia* open scrub where these are not occupied by evergreen scrub or *Juniperus* forest. The association is less prominent on limestone than on non-calcareous rocks owing to the better growth of the evergreen *Buxus* and of *Commiphorae* on the limestone. Where it does occur on limestone the association is represented by a very handsome *Acacia glaucophylla* Steud.*—*A. spirocarpa*—Dracaena schizantha** open wood, the *Dracaenae* being fine spreading trees 10 m. high. On other rocks the dominants are *Acacia glaucophylla**, *A. etbaica**, *A. nilotica* Del.* and *Terminalia Brownei**. Besides these trees other bushes are scarce, though *Commiphora tubuk* occurs, and in the xerosere *Peucedanum fraxinifolium* Hiern* on non-calcareous rocks, *Ficus populifolia* Vahl.*, *Combretum tricanthum* Fres.* and (on limestone) *Periploca ephedriformis*. In the hydrosere occur especially *Acacia spirocarpa**, *Balanites aegyptiaca** and *Grewia mollis*.* The absence of Aloes from this association is noteworthy. Among the grasses *Chrysopogon Aucheri* var. *quinqueplumis**, *Tricholaena setacea* C. E. Hubbard, *T. Gillettii* C. E. Hubbard and *Hyparrhenia hirta* Stapf are prominent. Some of the other herbs found here are *Hypoestes Hildebrandtii**, *Selaginella rupestris* Spring on non-calcareous rocks, the *Tiliaceae*, *Triumfetta trigona* Hutch. & Sprague and *T. flavescens* Hochst. which are especially characteristic, *Indigofera oblongifolia* Forssk., *Asystasia Coleae* Rolfe, *Dorstenia foetida* (Forssk.) Schweinf. & Engl., *Lindenbergia sinaica* Benth.,

Polygala abyssinica Fres., *Chascanum africanus* Moldenke, *Stylosanthes flavicans* Baker, *Linaria hastata* R. Br., *Pulicaria petiolaris* Jaub. & Spach, *Polygala erioptera* DC., *Pentanisia ouranogyne* S. Moore, *Oxygonum atriplicifolium* Martelli var. *sinuatum* Baker, *Pavonia Kotschyi* Hochst., *Melhania Denhami* R. Br., and *M. rotundata* Hochst.

In this association the Acacias retain their foliage until well into the dry season, if not throughout the year. The lower part of the association, which adjoins *Commiphora erythraea**—*Acacia Asak* open scrub, usually has abundant small shrubs such as *Croton Cliffordii** or *C. somalensis* and tall woody herbs such as *Triumfetta* and various *Labiatae* and *Malvaceae*. Above, where it adjoins evergreen scrub or Juniper forest, these shrublets are wanting and there is an open sward beneath the Acacias. This latter part may in reality be a grazing sub-climax to the evergreen scrub.

The effects of grazing upon the tree Acacia open woodland.—The whole formation is more or less closely grazed and the results of this can be seen in the scarcity of non-thorny trees and shrubs, in the way in which those that do exist are grazed down to a close compact mass, in the frequent patches bare of grass and the abundance of inedible plants such as *Euphorbia nubica**, *Aloe abyssinica** and *Cissus rotundifolia**. In parts of the Haud, owing to the absence of permanent drinking water for the stock, grazing is much less intense and this fact probably accounts for the abundance of the tall *Andropogon cyrtocladus** in the Haud, and of small *Commiphorae* and the absence of Aloes and *Sansevieria* which are eliminated by the competition of the grasses.

The problem of what would happen if grazing were eliminated or very much reduced depends on whether or not fires were permitted. In the former case one would expect a great extension of open grass plains. In the latter, parts of the *Acacia etbaica** association would probably develop towards evergreen scrub, the species of the latter formation being able to establish themselves in a dense grass cover. Elsewhere in the formation there would probably be a wide development of various small shrubs between the trees.

Transition from the tree Acacia open woodland to Commiphora—bush Acacia open scrub.

As the boundary between the two formations is approached species of the open scrub appear in the xerosere of the tree *Acacia* formation. Where the ground is broken the open scrub appears first on south-facing slopes. On level ground isolated dead *Acacia Bussei** trees, or whole patches of them, appear. These have probably been killed by drought ; the rainfall occurs as thundershowers and as these cover small well-defined tracts small areas

may get very much less than the usual rainfall if they happen to have been missed by the storms. The *Commiphorae* seem unable to establish themselves under the shade of the Acacias but can do so where the Acacias have been killed. The instability of the *Acacia Bussei** open woodland near its lower limit is shown by an occurrence at Burao, where an area of open woodland having been cleared for military purposes it was found that the South-West Monsoon, the " Kharif ", whipped up sand and dust storms in the open area which destroyed the open woodland to the North-East, thus continually extending the bare area.

Economics of the Formation. The whole formation provides grazing for sheep, goats and camels. The *Acacia etbaica** and the *Acacia glaucophylla**—*Terminalia Brownei** association also provide grazing for cattle. On alluvial tracts in the *Acacia etbaica** association occur the only agricultural areas in British Somaliland, the crops being sorghum, maize and grain. The formation produces gum arabic from *Acacia Senegal** and *A. Bussei**, and were the demand sufficient, most of the Acacia association could be converted into an *Acacia Senegal** plantation by broadcasting the seed, giving a few years' protection from grazing to allow the establishment of the seedlings, and killing the competing *Acacia Bussei** and *A. mellifera**.

Two of the dominants in the formation, *Acacia Bussei** and *Terminalia Brownei**, produce barks used for tanning, but these may be of little economic importance. *Sansevieria Ehrenbergii** and *S. guineensis*, which are abundant (especially the former) in the *Acacia Bussei** association on alluvium, yield fibres of economic importance, and alluvial tracts in this association could be converted into plantations of these species were the demand for the product sufficiently great.

In the *Acacia Bussei** association, more especially on caravan routes, the conservation of trees is of economic importance, as these protect the grazing and prevent dust. The government therefore issues edicts against the cutting of trees for fodder in times of drought and for Zarebas. In many parts of the formation, especially in the *Acacia etbaica** association, the destruction of the herbaceous vegetation by over-grazing is now leading to serious soil erosion and consequent deterioration of the grazing. Though the destruction of land suitable for agriculture and the gravity of the damage done is realised, no measures of control, whether by reducing the number of stock or giving the grazing areas periodic rests, are being put into practice. Any such remedial measures are made difficult by the lack of education among the Somalis, their mistrust of an alien government, their unwillingness to sell stock owing to the low prices obtained and excessive charges by middlemen, and the lack of money for fencing.

In a great part of the tree *Acacia* formation the value of the grazing is much reduced by the abundance of *Aloe abyssinica** ; such is the case for example around Buramo and Hargeisa. Since this plant is quite inedible, and nothing else can grow on the ground it occupies, it may reduce the grazing value of a piece of land considerably. It could probably be removed by the following practice, which in other ways would benefit the land. The area would be protected from grazing for some years and the grass allowed to grow tall, where this did not occur readily owing to the tall-growing grasses having been eliminated by continual intense grazing they should be sown. The tall grass would then be fired once, or more often, which would kill off the Aloes and the area would then once more be made open to grazing.

4. Deciduous scrub formation.

Description.—Small deciduous trees about 3 or 4 m. high, belonging largely to the genera *Acacia, Combretum, Terminalia* and *Commiphora* are crowded fairly closely together with bushes filling in gaps so that the community is often difficult to walk through. On the ground a fairly dense herbaceous covering is found, in which dense aspect societies of *Acanthaceae, Amaranthaceae,* etc., play a large part. It most resembles the tree *Acacia* open woodland, but differs from it in its much greater density and greater richness in species. From the *Commiphora*—bush *Acacia* open scrub it differs in its density and in that the dominants are trees rather than shrubs, while the ground vegetation is continuous and not tufted.

This deciduous scrub seems to be the same formation as that described by Phillips (31) for the central province of Tanganyika territory.

Area.—To the south and south east of Harar at 1200–1500 m.

Habitat.—No meteorological data are available. It would seem likely that the rainfall is rather higher than in the tree *Acacia* open wood formation, probably about 569 mm. per annum, the average temperature slightly greater and the minimum higher, certainly never falling towards freezing point. Probably the most important factor distinguishing the climate of this formation from that of the tree *Acacia* open woodland is the shorter length of the dry season. The rainfall is insufficient to supply permanent rivers, and those streams which, rising higher up in the evergreen forest formation, run down into this formation, gradually peter out. A soil sample from near the upper limit of this formation (1440 m.) on granite, had a P_H of 7·5 and ·494 per cent. organic matter.

This formation was not examined at all closely as it was merely hurriedly visited towards the end of the dry season (February) when but few of its plants were in flower. Some of the chief trees and shrubs are, *Dichrostachys glomerata* (Forssk.) Chiov., *Acacia*

pennata Willd., *A. Seyal* Del., *Capparis tomentosa* Lam., *C. Rothii* Oliv., *Combretum collinum* Fres., *Terminalia Brownei**, *Commiphora resiniflua*; others are, *Cissus quadrangularis,* Sterculia Rivae* Chiov., *Peucedanum fraxinifolium* Hiern, *Acacia spirocarpa**, *A. Senegal**, *Cadaba farinosa, Oncoba spinosa* Forssk., *Ximenia americana* L., *Gardenia lutea* Fres., *Pavetta gardeniifolia* Hochst. ex A. Rich., *Maerua Hoehnelii* Schweinf. and *Balanites glabra*. Among the herbs was the scarlet-flowered composite, *Notonia coccinea* O. & H.

Hydrosere.—On the banks of streams are found groves or woods of tree Acacias and, in places, thickets of *Tamarix* sp.

Economics.—Agriculture is practised and in conjunction with it the grazing of cattle and goats. Camels are not important. The cultivated ground is not confined to alluvial tracts but is also on gentle slopes. Where there is permanent running water sugar-cane is grown.

5. Evergreen Scrub Formation.

The climax community on mature deep soils is rarely or never found owing to the prevalence of agriculture in this formation. It seems that it would consist of a closed scrub of evergreen or almost evergreen shrubs, small trees and climbers with occasional larger trees. The shrubs are usually thornless and their leathery glossy leaves seem to be very frequently poisonous or distasteful to stock. The shade cast, while fairly deep in places, is much interrupted. Epiphytes other than crustose lichens do not occur. Continuous soils develop even on quite steep slopes. Grass grows densely where the bushes are removed but does not form a regular turf.

The *Buxus* community described by Collenette on the Al Hills in Eastern Somaliland belongs to this formation. It seems also to be the "Gebirgs busch" of Engler.

Area.—The formation occupies a fairly extensive zone in the Harar district, between the evergreen forest above about 6,500 feet and the tree *Acacia* open woodland or deciduous scrub below about 5,000 feet. In Somaliland only the xerosere is represented, in the most well-watered parts of the escarpment above about 3,700 feet, where it occurs in fairly small patches.

Environment.—There are no meteorological records for the evergreen scrub formation in Somaliland. It is certain, however, that it gets a certain number of showers in the dry season, and also heavy mists and dew. In Abyssinia there are certain data for Harar, which is in this formation. There are two rainy seasons, one with a maximum in April–May and a second with a maximum in July–August. There is no month quite without rain but less than 1 in. per month from October to February. The total annual rainfall is about 33 ins. Permanent streams occur but seem to get

most of their water from the more humid evergreen forest formation above.

The soils are brown, red or black loams. Even when derived limestone they may be sufficiently leached to be poor in lime and approaching neutrality. Organic carbon contents of 0·492 per cent. in an agricultural soil and 2·01 per cent. and 2·49 per cent. in native soils were found. On soils derived from limestone Ph. values ranged from 7 to 8, on those from non-calcareous rock 6·2 and 6·6 were found. It seems that this formation marks the zone above which leaching and below which evaporation predominate in their effects upon the soil.

Communities within the evergreen scrub formation.—In Somaliland four different types of xeroseral communities are found, their differences depending on the nature of the underlying rock and on altitude. The climax community does not occur in Somaliland owing to a lack of suitable situations. In the Harar district conditions are suitable for the development of the climax but it has been destroyed by agriculture and the search for firewood. The evergreen scrub around Harar is treated as a whole as sufficient time was not available to work out the various communities within it.

The communities to be described are then; in Somaliland (1) *Buxus-Acokanthera* scrub on lava rock below about 4,200 ft.; (2) *Acokanthera* scrub on non-calcareous rocks from about 4,200 ft.–5,700 ft. with *Euphorbia abyssinica** ; (3) *Buxus-Commiphora* scrub with *Mimusops Kummel* Hochst. on limestone below 4,700 ft.; (4) *Buxus-Juniperus*, etc., scrub on limestone 4,700 ft.–5,700 ft.; (5) around Harar, the evergreen scrub as a whole.

(1) *Buxus-Acokanthera scrub* on non-calcareous rock below 4,400 ft. This was seen best at Duwi pass, 10° 5′ N. by 44° 15′ E. on basaltic lava. The dominants are *Buxus Hildebrandtii* Baill.* and *Acokanthera Schimperi* Schweinf.* *Buxus* is the only member of the scrub in its lowest parts in ravines at 2,800 ft., *Acokanthera* commences at 3,700 ft. and is dominant in the southern margin of the scrub.

Scattered trees are *Cussonia Holstii* Harms and *Ficus vasta* Forssk.* and *F. populifolia*. Also *Dracaena schizantha** on rocks. Large shrubs, besides the dominants, are *Gymnosporia luteola* (Del.) Loesn., *Teclea pilosa* (Engl.) Verdoorn, *Rhus natalensis* Bernh., *Tarenna graveolens* (S. Moore) Bremek., *Pavetta gardeniifolia*, *Fluggea virosa* Baill., *Canthium bogosensis* Hutch. & E. A. Bruce* (*Plectronia bogosensis* Mart.), the evergreen *Commiphora Playfairii*, *Maerua sphaerogyna* Gilg & Benedict, *Euclea Kellau* Hochst. and *Grewia tembensis* Fresen. Smaller shrubs are *Coleus* sp. (4403), *Cadia purpurea* Ait., *Clerodendrum myricoides* R. Br., *Jasminum Steudneri* Schweinf., *Azima tetracantha* Lam., *Trematosperma cordatum* Urb., *Psiadia arabica* Jaub. & Spach; these

mostly occupy spaces between the large shrubs, but do not form a layer beneath them. Climbers are two species of *Asparagus* and *Vigna nilotica* Hook. f., *Tragia arabica* Baill. var. *parvifolia* Prain, *Cissus Schweinfurthii* Planch., *Vigna* sp. (4429). These are not abundant in individuals, except *Cissus Schweinfurthii*. Among the herbs of the *Buxus-Acokanthera* scrub are *Haemanthus abyssinicus*, *Cheilanthes coriacea* Decne, *Actiniopteris australis* (L. f.) Link, *Crassula galunkensis* Engl., species of moss, *Selaginella rupestris* and *Commelina benghalensis* Linn.

(2) *Acokanthera scrub* on non-calcareous rocks.—The general features are much the same as for the *Buxus-Acokanthera* scrub but the species are largely different. *Buxus* is subordinate or absent, *Acokanthera Schimperi** is everywhere dominant. Other trees and large bushes are *Euphorbia abyssinica* (*E. grandis*), *Olea somalensis* Baker*, *Gymnosporia luteola*, *Ficus populifolia**, *Pappea Radlkoferi* Schweinf.* Smaller shrubs are *Azima tetracantha*, *Cadia purpurea*, *Euphorbia nubica** and *Dodonaea viscosa* Linn.* Climbers are *Asparagus* sp. and *Senecio subscandens* Hochst., and herbs are much the same as in the *Buxus-Acokanthera* scrub.

(3) *Buxus-Commiphora scrub* with *Mimusops Kummel**.—This is a much more open scrub than those previously considered and between the evergreen trees and bushes are numerous deciduous ones, and a high proportion of succulents. The community was seen on the limestone Libah Heleh range, 10° 20′ N. by 43° E. where it is fairly extensive.

Dominants are *Buxus Hildebrandtii** and *Commiphora lughensis**. Other common trees and shrubs are *Dracaena schizantha**, *Commiphora ogadensis**, *Lannea malifolia* (Chiov.) Hutch. & E. A. Bruce (*Odina malifolia* Chiov.), *Pappea Radlkoferi**, *Olea chrysophylla* Lamk.*, *Sterculia Rivae*, *Grewia tembensis*, *Canthium bogosensis** (*Plectronia bogosensis*), *Combretum tricanthum* Fres., and at intervals of a few hundred metres occur large "Anjel" trees, *Mimusops Kummel*.

Among the small shrubs which occur between the larger ones *Euphorbia infausta**, *Croton Cliffordii** and *Grewia Schweinfurthii** are abundant and *Periploca ephedriformis*, *Dodonaea viscosa**, *Aloe Rivae**, and *A. abyssinica** and *Adenia veneata** are frequent. *Sansevieria abyssinica**, *Aloe somalensis** and *Haemanthus abyssinicus* also occur here. The relationships of this community are obscure; it seems to pass in places into *Commiphora erythraea** open scrub, elsewhere patches, apparently relict, of *Acacia Bussei** open woodland are found in it, and, in yet other parts, patches of the *Acacia glaucophylla**—*Acacia etbaica** open woodland. The rocky soil on which it grows would lead to its being included in a xerosere but it seems impossible to suggest what it leads up to.

(4) *Buxus-Juniperus scrub*.—This type of scrub occurs on the Libah Heleh between 4,700 ft. and about 5,700 ft. In it a succession from *Buxus* scrub to *Juniperus* forest appears to be

taking place, which is periodically checked, probably by droughts. A large number of dead Junipers were seen which may have been killed by the drought of 1927–28. In its more developed upper parts it approaches a low forest, while below it may be quite open. In it are found a larger number of bushes and trees than in any of the other evergreen scrub communities.

The trees in approximate order of importance are *Juniperus procera* Hochst.*, *Olea chrysophylla**, *Sideroxylon Gillettii* Hutch. & E. A. Bruce*, *Pappea Radlkoferi**, *Lannea malifolia* Hutch. & E. A. Bruce* (*Odina malifolia* Chiov.), *Pistacia falcata* Becc.*, *Ficus populifolia* Vahl*, *F. vasta* Forssk.*, *Dracaena schizantha** and *Euphorbia grandis** (*E. abyssinica*), the last three being scarce. The *Ficus* spp. are chiefly found on limestone. The absence of *Mimusops Kummel** and *Cussonia Holstii* is noteworthy.

The bushes and small trees in approximate order of importance are *Buxus Hildebrandtii**, *Gymnosporia luteola*, *Euclea Kellau*, *Grewia tembensis*, *Acokanthera Schimperi**, *Canthium bogosensis** (*Plectronia bogosensis*), *Ziziphus mucronata* Willd.*, *Teclea nobilis* Del., *Ficus glumosa* Del., *Jasminum Steudneri* Schweinf., *Pistacea Lentiscus* var. *emarginata* L., *Heeria insignis* (Del.) O. Kuntze, *Ficus salicifolia* Vahl, *Carissa edulis* Vahl, *C. edulis* var. *tomentosa* Stapf, *Sageretia spiciflora* (A. Rich.) Chiov., *Commiphora Playfairii*, *Maerua sphaerogyna*, *Tarchonanthus camphoratus* L., *Rhus retinorrhoea* Steud. and *Fagara chalybea* Engl. Climbers are *Asparagus* sp. and *Rhoicissus Revoilii* Planch.

Small shrubs are in order of importance, *Cadia purpurea* Ait.*, *Dodonaea viscosa**, *Euphorbia infausta**, *Ephedra Alte* C. A. Meyer, *Periploca ephedriformis*, *Coleus* sp., *Ballota fruticosa* Baker, *Euryops pinifolia* A. Rich., *Lasiosiphon somalensis*, and *Osyris abyssinica* Hochst.

A dry open form of evergreen scrub.—This community occurs above about 5,600 ft. on the south side of the Libah Heleh range and on the Darabileh range to the south of this, in each case on limestone. Its altitude requirements are thus similar to those of the *Juniperus* forest and, on the Libah Heleh, succession from it to the forest may sometimes be seen; it shares several species with the *Juniperus* forest and it is *a priori* to be expected that fire and heavy grazing should reduce parts of the *Juniperus* forest to an open woodland.

For these reasons it is here considered as a fire-grazing subclimax to the Juniper forest. On the other hand there is a close parallel between the relations of this community with the *Juniperus* forest and those of the *Acacia etbaica** association with the evergreen scrub, and it is quite possible that this community should be treated either as an association in the open woodland formation or as a separate "broad-leaved tree open woodland" formation.

The five chief trees are *Olea somalensis**, *Acokanthera Schimperi**, *Combretum ferrugineum* A. Rich., *Sideroxylon Gillettii**, and *Acacia etbaica** ; other trees are *Ficus ingens* Miq. and *F. glumosa*, *Pistacia falcata**, and *Pittosporum abyssinicum* Del. These are well spaced and between them are numerous bushes of *Dodonaea viscosa**, *Periploca ephedriformis* on rocky places, *Dicoma somalensis* S. Moore, and *Cadia purpurea**.

The transition to *Juniperus* forest is as follows :—Shrubs of the species listed as fringing *Juniperus* forest appear in the shade of trees of the open woodland, forming clumps, Juniper appears in the clumps, the clumps grow larger, coalesce, the fringing shrubs disappear and the process is complete.

(5) *Evergreen scrub* around Harar.—Local dominants are *Acokanthera Schimperi**, *Cadia purpurea** where *Acokanthera* has been destroyed by fire, *Euphorbia* sp., *Dracaena*, at low altitudes on limestone. Among the larger trees which occur scattered through the scrub are *Ficus* spp., including *F. Thonningii* Blume, *Pappea Radlkoferi**, *Croton macrostachys* Hochst., *Erythrina* sp., *Terminalia Brownei**. Other bushes and small trees are *Carissa edulis*, *Calpurnia subdecandra* (L'Herit.) Schweickerdt, *Premna viburnoides* A. Rich., *Osyris abyssinica*, *Rumex nervosus* Vahl, *Rosa abyssinica* R. Br., *Vangueria apiculata* K. Schum., *Euclea Kellau*, *Rhus glutinosa* Hochst. ex A. Rich., *Brucea antidysenterica* Lam., *Cassia mimosoides* S. Moore, *Dovyalis abyssinica* Warb., *Tephrosia barbigera* Welw., *Rhus retinorrhoea*, *Acacia seyal*, *Grewia ferruginea* Hochst., *G. canescens*, *Heeria insignis*, *Grewia tembensis*, *Lannea Schimperi* (Hochst.) Engl., *Ochna inermis* Schweinf., *Sageretia spiciflora*, *Secamone punctulata* Decne., *Cussonia Holstii*, *Acacia etbaica**, *Fagara usambarensis* Engl., *Periploca ephedriformis*, *Dodonaea viscosa**.

Some of the chief climbers are *Rubia discolor* Turcz., *Commicarpus plumbagineus*, *Cissus adenocaulis* Steud. and *C. Schimperi* Hochst., *Jasminum floribundum* R. Br., *Pterolobium exosum* (Gmel.) Bak. f., *Osyridicarpus Schimperianus* A. DC., *Adhatoda Schimperiana* Nees, *Helinus mystacinus* E. Mey., *Rhoicissus erythrodes* Planch., *Stephania abyssinica* var. *tomentella* Oliv.

Parasites :—*Loranthus Schimperi* var. *parviflorus* Hutch. & E. A. Bruce, *L. ugogensis* Engl., *Viscum nervosum* Hochst. ; Herbs, *Sida Schimperiana* Hochst., *Rumex nervosus*, *Eulophia Rueppelii* (Rchb. f.) Summerhayes, *Dyschoriste radicans* Nees, *Plumbago zeylanica* L., *Rhynchelytrum repens* (Schum.) C. E. Hubbard, *Arthropteris orientalis* (Gmel.) O. Posth., *Aloe Steudneri* Schweinf., *Hibiscus crassinervius* Hochst., *Indigofera brevicalyx* Bak. f., *Polygala Quartiniana* A. Rich., *Orthosiphon somalensis* Vatke, *Lantana salvifolia* Jacq., *Abutilon angulatum* Mast.

Economics.—Cultivation in this zone is comparatively intensive. Sorghum and Maize are the chief cereals and near Harar wherever

a little water is available for partial irrigation the hill sides are terraced for the cultivation of coffee, *Catha edulis*, banana, sweet potato and other crops. Cattle are kept and mules and donkeys for transport. The population is fairly dense, and has caused much destruction of trees and bushes for firewood.

The transition from Evergreen scrub to tree Acacia open woodland.— Evergreen scrub borders on each of the three associations of the tree *Acacia* open woodland. Where the transition is to *Acacia Bussei** open woodland, the chief evergreen shrub is *Buxus Hildebrandtii ;* where the transition is to *Acacia etbaica** open woodland, *Acokanthera Schimperi** predominates. Patches of evergreen scrub occur as post climaxes in such places as the banks of stream beds, shady ravines and steep north-facing slopes. An interesting example of the dependence of the evergreen scrub on a higher water supply than that necessary for the *Acacia* open woodland was seen on a Jurassic limestone hill approximately 10° 7′ N. by 43° 16′ E. Here, on a north-facing slope was an outcrop of a brown limestone fairly rich in clay in the middle of the usual pale limestone poor in clay. On the brown rock, and strictly confined to it were abundant bushes of *Buxus Hildebrandtii**, *Ficus salicifolia* and *Lannea malifolia*, while on the surrounding white rocks was *Acacia Bussei** open woodland, with *Croton Cliffordii**, *Aloe abyssinica** and *A. Rivae**.

Thus here at the transition zone the greater water retaining capacity of the more clayey soil decided whether evergreen scrub or open woodland should prevail. Elsewhere where the rainfall is higher, evergreen scrub is found on all types of rock.

There is evidence that parts of the open woodland bordering upon the evergreen scrub are in reality a sub-climax which would develop into evergreen scrub if the grazing were less intense. Thus, on the Libah Heleh mountains old *Acacia etbaica** trees are found with young evergreen shrubs springing up all round them and at Buramo evergreen shrubs (*Acokanthera*) appear in an alluvial area which has been protected as a government grazing reserve.

6. The Evergreen Forest Formation.

The climax community is a forest of evergreen trees with well-marked layers of shrubs and herbs beneath them. Owing to fires and cultivation the climax forest is mostly replaced by various successional communities.

This formation is the same as the sub-tropical evergreen forests of Abyssinia, East Africa and South Africa (Phillips 29).

The area occupied includes the upper parts of the Harar massif from about 6,500 ft. to 9,500 ft. and a small area on the Libah Heleh mountains in western Somaliland. In central and eastern Somaliland it occurs on the summit of the Golis range and on the Surud mountains (Collenette 31).

Environment.—No weather records are available. The rainfall however is probably greater than that of Harar, 33 in. per annum. In Somaliland clouds are frequent. The more mature soils are dark brown, dark grey or black. Organic carbon contents of 1·72 per cent., 2·78 per cent. and 4·82 per cent. were found in forest soils and 6·31 per cent. in a moist peaty soil in a marsh. This last soil had a P_H of 5·4. Eight other soils from various types of community in the moister *Podocarpus* section of the formation had P_H values ranging from 6·0 to 7·1. Some of these soils were overlying limestone, although none held more than a trace of lime and thus it is clear that here leaching is sufficient for slightly acid soils to be developed even from calcareous rocks. In the drier *Juniperus procera** association two soils had P_H values of 7·2 and 7·4. In this formation a more or less deep layer of soil is produced everywhere except on vertical cliffs.

Communities within the evergreen forest formation.—Two well-marked associations occur, a *Juniperus procera** association in the drier parts of the formation and a *Juniperus-Podocarpus* association in the moister parts. Only the former is represented in Somaliland.

The Juniperus procera association.—The forest is comparatively open and dry, the *Juniperus* not casting a very heavy shade. Generally it grows sufficiently openly to retain its branches down to near ground level and thus differs in appearance from individuals of the same species in the *Juniperus-Podocarpus* association, which grow closer together and develop tall clear boles. In this association *Juniperus* cannot become established in the open but only in the shelter of bushes. This again is in contrast with the other association where *Juniperus* develops out of open grassland. The shrubs of the succession towards *Juniperus* forest are usually also found in the evergreen scrub. Examples are, in the Harar district, *Carissa edulis, Calpurnia subdecandra, Osyris abyssinica, Rosa abyssinica, Dovyalis abyssinica, Celtis Kraussiana* Bernh., *Juniperus procera**, *Clerodendrum myricoides, Podocarpus gracilior* Pilger, *Sideroxylon oxyacantha* Baill., *Myrsine africana* L., *Euphorbia polyacantha* Boiss., *Dovyalis verrucosa* Warb. In the Libah Heleh are *Rhus natalensis, Pittosporum abyssinicum, Teclea nobilis, Gymnosporia luteola, Adhatoda Schimperiana, Carissa edulis* var. *tomentosa, Euclea Kellau, Sageretia spiciflora, Cadia purpurea.*

In the Libah Heleh about 70 per cent. of the trees were *Juniperus procera**, 20 per cent. *Sideroxylon Gillettii**, and 10 per cent. *Olea somalensis**. Among the undershrubs and tall herbs *Ephedra Alte, Gymnosporia luteola, Psiadia arabica* Jaub. & Spach, *Stachys Hildebrandtii* Vatke, *Coleus albidus* Vatke, *Pollichia campestris* Ait., *Galium Aparine* L., *Umbilicus botryoides* Hochst. occurred. The lesser herbs include *Pleurochaete Beccarii* Vent., *Tortulea atrovirens* (Sm.) Lindl., *Actiniopteris australis, Cheilanthes coriacea, Asplenium aethiopicum* (Burm.) Becherer, *Eragrostis* sp. The climber *Secamone*

PLATE III.

Evergreen Forest Formation, Podocarpus, etc., Association near Kolubi, 9° 25′ N., 41° 40′ E., c. 7,500 ft.

Podocarpus forest being cleared. The trees are *Podocarpus gracilior* and *Olea Hochstetteri*.

[*To face page* 66.

punctulata is sometimes abundant. No angiospermous epiphytes occur in this forest, but lichens, including *Usnea articulata* Hoffm., are frequent. This absence of angiospermous epiphytes is another contrast with the *Juniperus-Podocarpus* association.

In very many respects this association represents a transition from the evergreen scrub to the evergreen forest formation. The coffee and *Catha edulis* cultivation, typical of the evergreen scrub, with their characteristic hedges largely composed of tree *Euphorbiae*, disappear in this association, while the cultivation of wheat and barley, typical of the forest formation, begins.

Juniperus-Podocarpus forest.—The communities within this formation are numerous and the relations between them obscure. Of the forest itself there are several types containing different proportions of *Juniperus*, *Podocarpus* and other trees, sometimes with neither *Juniperus* nor *Podocarpus* present at all. No attempt can be made to describe these types in any detail but it seems clear that the type with *Juniperus* as dominant is a xeroseral community generally occurring on steeper slopes with shallow soil. The *Podocarpus* only becomes important on deeper soils. On very steep and rocky places a xeroseral evergreen scrub or bush occurs which contains at lower altitudes many species of the evergreen scrub formation and at higher altitudes species typical of the *Erica* thicket formation, including *Erica arborea* Linn. itself.

A very important and extensive subclimax community is open grassland which is produced by the clearing of the forest for grazing and cultivation and is prevented from reverting to forest by fires, grazing and the search for firewood. A stage in the secondary succession from this grassland to forest is represented by a tangled mass of tall rank herbs, climbers and shrubs.

The climax forest consists of (*a*) large trees up to about 30 m. tall forming either an open or a closed canopy ; (*b*) a layer of shrubs and small trees, interrupted where the big trees form a closed canopy, and continuous where they are open ; (*c*) climbers ; (*d*) herbs ; (*e*) epiphytes.

Among big trees are *Podocarpus gracilior*, *Juniperus procera**, *Olea Hochstetteri* Bak., *Pygeum africanum* Hk. f., *Schefflera abyssinica* (Hochst.) Harvey (usually on steep slopes), *Lachnopylis congesta* (R. Br.) C. A. Sm., *Dombeya Bruceana* A. Rich., *Myrica salicifolia* Hochst. ex A. Rich. (in marshy places), *Erythrina Brucei* Schweinf. Some of the chief small trees and shrubs are *Discopodium penninervium* Hochst., *Trichilia Volkensii* Gürke, *Maesa lanceolata* Forssk., *Gymnosporia* sp. (5131), *Teclea nobilis*, *Dracaena afromontana* Mildbr., *Pavetta abyssinica* Fresen., *Cassipourea abyssinica* Alston, *Lasiosiphon glaucus* Fres., *Ekebergia Ruppeliana* A. Rich., *Olea chrysophylla**, *Rhamnus Staddo* A. Rich., *Acacia abyssinica**,

Galiniera coffeoides Del., *Loranthus sarertaensis* Hutch. & E. A. Bruce, *Rhus abyssinica* Hochst., *Buddleja polystachya* Fresen., *Rubus Volkensii* Engl., *Jasminum abyssinicum* R. Br., *Gymnosporia luteola*, *Halleria lucida* L., *Vernonia amygdalina* DC., *Allophylus abyssinicus* (Hochst.) Radlk., *Debregeasia salicifolia* Rendle, *Trichocladus malosanus* Baker, *Bersama abyssinica* Fresen., *Gymnosporia arbutifolia* (Hochst.) Loes.

Some of the climbers and lianes are *Rosa abyssinica*, *Urera hypselodendron* Wedd., *Jasminum abyssinicum*, *Cissus cyphopetala* Fresen., *Toddalia asiatica* Lam., *Asparagus asiaticus* Linn., *Rubus apetalus* Poir., *Periploca linearifolia* Dill. & Rich., *Clematis* sp.

Among the herbs, *Hypoestes triflora* (Forssk.) Roem. & Schultes, *Sida triloba* Cav., *Asplenium monanthes* L., *Acanthus eminens* C.B. Cl., *Ceratostigma abyssinicum* Aschers., *Crassula alsinoides* (Hk. f.) Engl., *Poa leptoclada* Hochst. ex A. Rich., *Veronica abyssinica* Fres., *Digitaria abyssinica* Stapf, *Cardamine africana* L., *Arisaema Schimperianum* Schott, *Pteris dentata* Forssk., *Caucalis incognita* Norman, *Sanicula europaea* Linn., *Euphorbia longecornuta* Pax, *Pimpinella simensis* Bth. & Hk. f., *Phyllanthus meruensis* Pax, *Coleus lanuginosus* Hochst., *Pimpinella Neumannii* Engl., *Viola abyssinica* Steud., *Primula verticillata* Forssk. var. *simensis* Hk. f. (damp rocks), *Hibiscus Ludwigii* E. & Z., *Otostegia repanda* Benth., *Eragrostis Schweinfurthii* Chiov., *Crassula abyssinica* A. Rich., *Vernonia Leopoldii* Vatke, *Athrixia rosmarinifolia* O. & H., *Pteris cretica* Linn., *Stachys aculeolata* Hk. f., *Ranunculus pubescens* Thunb., *Phalaris arundinacea* Linn., *Calamintha simensis* Benth., *Orizopsis* sp., *Sempervivum leucoblepharum* (Webb) Hutch. & E. A. Bruce (cliffs), *Argyrolobium ramosissimum* Bak., *Epilobium fissipetalum* Steud., *Asplenium abyssinicum* Fée, *Apium nodiflorum* Linn., *Adiantum Capillus-Veneris* Linn., *Funaria hygrometrica* Hedw., *Anthroceros* sp.

Among the ephiphytes *Usnea longissima* Ach., *Lindbergia abbreviata* (Schimp.) Broth., *Leucodon dracaenae* Vent., *Anaptychia leucomela* Ach., *Peperomia abyssinica* Miq., *Neckera remota* Bry., *Tortula erubescens* (C.M.) Broth., *Xanthoria parietina* Th. Fr., a Lichen (indet.), *Polypodium lanceolatum* Linn., *Peperomia reflexa* A. Dietr., *Orchidaceae* spp. and *Polystachya Rivae* Schweinf., *Leptogium cyanescens* Kbr., *Physcia stellaris* Fr., *Parmelia* sp. (5432), *Ramalina yemensis* Lyl., *Loxogramma lanceolata* (Sw.) Pr.

Subclimax communities.—Open grassland. This consists of a close growth of tufted grasses which do not however form a turf such as could be lifted except in places which are unusually damp and well grazed. The area was visited at the end of the dry season, very few of the plants of this community were in flower and it was impossible to determine the dominant grasses. Some members of the community were *Pennisetum clandestinum* Hochst., *Aristida*

adoensis Hochst., *Hyparrhenia hirta, Silene chirensis* A. Rich., *Cynodon Dactylon, Microchloa abyssinica* Hochst. This almost complete cessation of flowering in the dry season is in marked contrast with the state of affairs in the evergreen forest itself where almost all the trees and shrubs were more or less in flower.

In moist places, around springs, etc., there occurred *Lythrum rotundifolium* Hochst. ex A. Rich., *Epilobium hirsutum* L., *Potentilla reptans* Linn., *Nasturtium officinale, Alchemilla cryptantha* Steud., *Anagallis serpens* Hochst., *Carex acutiformis* Ehrh., *Siegesbeckia abyssinica* O. & H., *Hydrocotyle monticola* Hk. f., *Scirpus costatus* Boeck., *Pycreus aethiops* C.B. Cl., *Juncus Bachiti* Hochst., *Alchemilla pedata* Hochst., *Fuirena pubescens* (Lam.) Kunth, *Cotula abyssinica* Sch. Bip., *Lobelia stellaroides* Bth. & Hk. f., *Scirpus setaceus* Linn., *Hydrocotyle asiatica* Linn., *H. natans* Cyr.

Tangle in the secondary succession to forest.—This community contains a great variety of tall herbs and in addition many of the shrubs listed as members of the forest appear in it. There is usually no single dominant but locally *Echinops Ellenbeckii* O. Hoffm., with its large globular heads of crimson flowers, may be very conspicuous. Other important plants are *Tephrosia atroviolacea* Bak. f. ex De Wild., *Hypericum Quartinianum* A. Rich., *Momordica Schimperiana* Naud., *Barleria* sp., *Hypoestes antennifera* S. Moore, *Lactuca capensis* Thunb., *Kalanchoe Quartiniana* A. Rich., *Cluytia abyssinica* Jaub. & Spach., *Echinops macrochaetus* Fres., *Hypericum lanceolatum* Lam., *Myrsine africana, Senecio myriocephalus* Sch. Bip., *Phagnalon hypoleucum* Sch. Bip., *Inula confertiflora* A. Rich., *Leonotis velutina* var. *rugosa* Bak., *Lavatera abyssinica* Hutch. & Bruce, *Stephania abyssinica* Walp., *Microglossa Elliotii* S. Moore, *Coreopsis macrantha* Sch. Bip., *Brachypodium flexum* Nees var., *Lithospermum officinale* L., *Pentas Schimperiana* Vatke, *Nepeta Petitiana* Baker, *Helichrysum globosum* Sch. Bip., *H. Hochstetteri* Hk. f., *H. Schimperi* Sch. Bip., *Pittosporum abyssinicum* Del.

Economics.—The forest produces timber of *Podocarpus* and *Juniperus* which might be valuable (that of the *Juniperus* is resistant to insect attacks) but is at present largely wasted, being burnt down to clear the ground for temporary cultivation. Large areas now covered by valueless tangle and scrub or almost valueless grassland could grow *Juniperus* in fairly large quantities. Cattle are kept and the chief crops are wheat (*Triticum durum* and *dicoccum*), barley, various pulses and maize. Coffee and *Catha* are not grown and irrigation is not practised in this community.

Transition from evergreen forest to evergreen scrub.—The forest becomes more and more restricted to alluvial areas. Elsewhere *Juniperus* occurs simply as scattered bushes among the other members of the scrub. In the Libah Heleh interesting areas occur in which the *Juniperus* trees have been killed by drought, their

dead stems standing above the *Buxus* bushes which are left in sole possession. Everywhere the transition between the evergreen scrub which is the climax in its own formation and that which is a stage in the xerosere of the *Juniperus* forest is very gradual and it is often impossible to say which community one is in.

(7) *Erica thickets formation.*—The climax community is an evergreen thicket casting a rather light shade of small trees about 4 m. high with *Erica arborea* Linn. as dominant, beneath this is a rich herbaceous vegetation. As a fire-grazing subclimax a grassland is found in which the herbaceous plants form a turf that might be lifted in a sheet. The area occupied is very small, being restricted to a small patch on the summit of Mt. Kondudo above 9,300 ft. (where only the grassland subclimax is represented) and a somewhat larger patch on the summit of Gara mulata above 9,500 ft.

For the climate no data are available. It seems probable, however, that the main difference between the climate of this formation and that of the evergreen forest is one of temperature and not of rainfall. The soils are dark brown or black, leached almost free of lime, organic carbon percentages of 6·29 and 4·55 were found and P_H of 5·63, 6·63, 6·9 and 7·25.

The climax community occurs chiefly on the more shaded northern slopes of the mountains as here it does not dry out so completely in the dry season and hence is less liable to destruction by fire. The small trees and shrubs are *Erica arborea* dominant, frequent *Hypericum lanceolatum*, *Hagenia abyssinica* Willd., occasional *Pittosporum lanatum* Hutch. & E. A. Bruce, and *Crotalaria Erlangeri* Harms, *Myrsine africana*, an abundant undershrub, *Lobelia Rhyncopetalum* Hemsl., *Rubus Volkensii*, and among the herbs *Leonotis velutina* var. *rugosa*, *Dryopteris Schimperiana* (Hochst.) C. Chr., and other ferns, *Thalictrum minus* L., *Arabis albida* Stev., *Scabiosa Columbaria* L., *Helichrysum Traversii* Chiov. (No. 5321), *Ranunculus oreophytus* Del., *Alchemilla kiwuensis* Engl., *Conium maculatum* Linn., *Malabaila abyssinica* Boiss., *Cynoglossum coeruleum* Hochst., *Geranium simense* Hochst. ex A. Rich., *Cerastium caespitosum* Gilib., *Bartsia longiflora* Hochst., *Veronica abyssinica* Fres., *Swertia Schimperi* Griseb. and *S. Quartiniana* A. Rich., *Pellaea quadripinnata* (Forssk.) Prantl, *Anthemis abyssinica* J. Gay, *Vicia sativa* var. *angustifolia* Ser., *Lysimachia africana* Engl., *Calamintha simensis* Benth., *Bromus adoensis* Hochst., *Cystopteris fragilis* (L.) Bernh., *Oxyrrhynchium kenyae* Dix. ined., *Mnium rostratum* Schrad., *Funaria hygrometrica*.

On Gara mulata mountain several areas where this *Erica* thicket had recently been burnt down were noticed. The *Erica* was regenerating from its roots but it is clear that too frequent burning would destroy it. Thus is created the open grass fire subclimax which is more extensive than the *Erica* thickets. The

chief grasses were not seen in flower. A marked feature is the abundance of *Helichrysum abyssinicum* Sch. Bip., *Landtia Rüppellii* Benth. & Hk. f., *Hypoxis* sp. (5221), *Thymus serpyllum* Linn., and *Micromeria biflora* Benth. *Albuca abyssinica* Jacq., *Gerbera piloselloides* Cass., *Alchemilla kiwuensis*, *Merendera abyssinica* A. Rich., *Bartsia Petitiana* Hemsl., *Caucalis melanantha* Steud., *Salvia nudicaulis* Vahl var. *nubica* Bak., *Moraea diversifolia* Baker, and *Argyrolobium virgatum* Baker also occur.

The grassland provides grazing for cattle and on Gara mulata one Galla village is found in this formation.

Evidence, chiefly Botanical, for a Pluvial Period in Western British Somaliland and Adjacent Regions.

1. The western subdesert is very poor in plants not found in other formations and the North-Western *Commiphora*-bush *Acacia* open scrub formation is poor in species if compared with the same formation in the eastern coastal districts, and in the eastern Haud. For instance at one spot in the Haud, on a uniform level plain, twelve species of *Commiphora* were collected in three days, while this number of species was not found in as many weeks in this formation in the northern coastal districts, on several types of soil and at different altitudes. Many species of plants do not occur much west of Berbera in spite of apparently favourable conditions being found. Examples are *Conocarpus lancifolius* Engl., *Kelleronia splendens* Schinz and *K. Gillettii* Bak. f., *Acacia misera**, *Zygophyllum Hildebrandtii*. These facts can be accounted for on the hypothesis that a pluvial period has occurred in geologically recent times in Western British Somaliland during which the subdesert and *Commiphora*-bush *Acacia* open scrub were replaced by more mesophytic formations. When arid conditions prevailed after the pluvial period these formations were formed through migration from the east and south-east and therefore have naturally only a certain number of the species of the latter regions, and a few endemic species of their own. Such a hypothesis will also account for the wide distribution of species belonging to the evergreen scrub formation which are now restricted to small isolated patches. In the pluvial period the evergreen scrub must have occupied a much larger area and the migration of its species was relatively easy. Without some such hypothesis it is very difficult to account, for instance, for the occurrence of *Erica arborea*, a plant with no special means of dispersal, on the Golis range separated by 150 miles of country too dry for it from its nearest station in the Harar district.

Evidence bearing on this question is also available from the *Erica* thicket formation of the mountains near Harar, since here there occur a number of plants such as *Thalictrum minus*, *Ranunculus oreophytus* and *Lobelia Rhynchopetalum*, which do not occur

below about 9,000 ft. and are separated by many miles of lower country from their nearest station in the main highlands of Abyssinia.

To explain the distribution of these plants it is necessary to assume that the pluvial period was also one of rather lower temperature as it seems to be, in their case, temperature rather than moisture which restricts them to above a certain altitude.

Geological evidence for a pluvial period, according to Mr. Farquharson, the government geologist, is not wanting in Western Somaliland ; it takes the form of alluvial gravels more extensive than any present stream could deposit and erosion of eocene deposits greater than could be accomplished with the present climate.

This hypothesis of a recent pluvial period is in harmony with the conclusions of archaeologists and geologists working in Egypt, Kenya and Palestine. See particularly G. Caton Thompson and E. W. Gardner. The hypothesis has certain economic implications as it means that various trees such as *Cordeauxia edulis* Hemsl.*, valuable for its nuts, and *Conocarpus lancifolius*, valuable for its shade, could probably be successfully introduced into the northern *Commiphora*-bush *Acacia* formation from the eastern and south-eastern regions, the reason for their absence in the north-west being simply a failure to migrate there.

Material in amplification of Collenette's Paper.

Somali plant names.—Mr. Collenette remarks that Somali plant names fall into two classes, those of Ishaak tribes and those of Darod tribes. To this it should be added that among the Darod tribes there seems to be a division between the Harti group, including the Mijertain, Warsangeli and Dolbahanta, and the remainder of the Darod including the Ogaden, Abasgul, Ali Gheri and Bartiri in the South and South-West. Mr. Collenette's Darod plant names are of the Harti group. In the west the Esa have another set of names for plants, which is used in part by the Gudabirsi who, however, also use some of the Ishaak names. The names in this paper are those used among the Ishaak.

Notes on certain species.—The two species of *Dorstenia* collected, *D. crispa* and *D. foetida*, were not confined to the southern sides of rocks as Mr. Collenette reports for *D. crispa* in the Al Hills.

Cynanchum sarcostemmatoides K. Sch., *Caralluma Dicapuae*, *Portulaca somalica* N.E. Br., and *Sarcostemma viminale* are among the numerous succulent plants chewed by the Somalis to allay thirst. These plants taste bitter and it is said that they are always much more bitter in the morning than in the afternoon. This would seem strongly to suggest that they possess that type of metabolism in which organic acids are produced as a product of respiration and later consumed in photosynthesis.

Smoke used as a disinfectant.—When their wicker and gum milk vessels or " Hans " have become foul the Somalis cleanse them in

an interesting way. They make in the ground a small pit, having a narrow opening. In the pit, which is a foot or two deep, they make a fire of the wood of certain species of tree, principally *Balanites aegyptiaca**, *B. orbicularis**, *Acacia spirocarpa**, *Commiphora tubuk*, and *Boscia minimifolia**. The Han is then inverted over the mouth of the pit and is said to be cleansed by the smoke so that it no longer sours the milk put into it.

Notes on ornithophily in Somaliland and the Harar district of Abyssinia.

In Somaliland, according to the Somalis, several kinds of birds visit a large number of different kinds of flowers in order to obtain the honey. The following observations were made on this habit. The red or orange flowered *Aloe abyssinica**, which grows in sheets in parts of the tree *Acacia* open woodland, was seen to be visited by the Somali Mariqua Sunbird, *Cinnyris mariquensis hawkeri*, by the Superb Starling, *Spreo superbus*, and also by another species of Glossy Starling. The starlings, although assiduous in visiting this species of *Aloe* when it was in bloom, were not seen visiting any other flowers. They are common in Somaliland in the tree *Acacia* open woodland and may at any time be seen feeding on the ground, on insects. The sunbird on the other hand, which though very generally present is by no means so abundant as the starling, was several times seen visiting a number of other flowers. For instance *Aloe somaliensis** and *A. Rivae**, *Blepharis fruticulosa*, a white flowered Labiate, *Loranthus curviflorus* Benth., *Justicia* sp. (4881) and *Coleus cicatricosus* Hutch. & E. A. Bruce. These plants have yellow, white, blue or crimson flowers, and thus the sunbird is in no way limited in its choice of colours. In the dry season the sunbirds are very much restricted to the *Loranthus* which is one of the few common plants in flower at that time. It seems also that its flowers are not visited by insects, at any rate no insect visitors were seen. In the case of the Aloes, on the other hand, both bees and butterflies were seen visiting the flowers. The sunbird is far more suited to visiting flowers than the glossy starlings on account of its lesser weight, its longer, slenderer beak, and the fact that unlike the starling it can cling upside down in order to get at the flowers.

In Abyssinia several unidentified species of sunbird were seen visiting a number of plants, and sunbirds were seen in greater numbers than in Somaliland. The plants visited were *Carissa edulis*, *Vangueria apiculata*, which was seen visited on more than one occasion by several species of sunbird, *Adhatoda Schimperiana*, *Erythrina* sp. (5094) very much visited, *Echinops Ellenbeckii*, *Leonotis velutina* var. *rugosa*, *Woodfordia uniflora* (A. Rich.) Koehne, *Crotalaria Erlangeri*, and *Erythrina Brucei*. Several of these plants have red flowers (in *Echinops* this is an unusual colour), red being generally considered very common among ornithophilous flowers. *Vangueria apiculata*, however, which is very assiduously

visited, has green flowers. These plants occur in the evergreen scrub, the evergreen forest and also the *Erica* thicket formations, and it seems very probable that in the last named the Tree *Lobelia, L. Rhynchopetalum,* is also visited by sunbirds.

It is thus clear that ornithophily is a common occurrence in this part of Africa, except in the more arid zone, where it was not observed. Most of the observations made here can be paralleled from Southern Tropical Africa where Aloes and *Erythrina* and *Leonotis leonurus* are visited by sunbirds. M. S. Evans in a paper on " The fertilisation of flowers, with some illustrations from the Natal flora " remarks that *Loranthus Kraussianus* Meisn. is pollinated only by sunbirds and that if these are kept from it no seed is set. He also remarks that other species of birds besides sunbirds may sometimes visit flowers. It has long been known that ornithophily is very prevalent in the South-Western Cape, but it has wrongly been considered that this was somewhat of a special feature of this region separating it from the rest of Africa.

That sunbirds are ready to visit flowers unfamiliar to them is proved by an instance when I saw one visiting a species of *Opuntia* near Harar.

List of Scientific Names of the more important plants in the foregoing pages with their equivalent vernacular names.

Acacia Asak *Willd.*—Adad medu. A. Bussei *Harms.*—Galol. A. etbaica *Schweinf.*—Sugsug, Khansa, Yube. A. glaucophylla *Steud.*—Rede. A. mellifera *Benth.*—Bilel. A. misera *Vatke*—Khansa, Sarman. A. nilotica *Del.*—Marah. A. Senegal *Willd.*—Jalefon, Adad. A. Sieberiana *DC.*—Jerin. A. somalensis *Vatke*—Hini. A. sp. nr. Bussei *Harms*—Sarman. A. spirocarpa *Hochst.*—Gurha. A. sp. nr. subalata *Vatke*—Marah. **Acokanthera** Schimperi *Schweinf.*—Waba. **Adenia** venenata *Forssk.*—Adahi medu. **Aerva** tomentosa *Forssk.*—Sorna. **Albizzia** sp.—Rhedib. **Aloe** abyssinica *Lam.*—Daar Gabar. A. Rivae *Baker*—Daar Burug. A. somaliensis *C. H. Wright*—Daar biyu. A. trichosantha *Berger*—Daar merodi. **Andropogon** cyrtocladus *Stapf*—Dur. **Balanites** aegyptiaca *Del.*—Ghot. B. glabra *Mildbr. & Schlecht.*—Kidi. B. orbicularis *Sprague*—Kulan. **Berchemia** discolor *Hemsl.*—Den. **Boscia** minimifolia *Chiov.*—Megag. **Buxus** Hildebrandtii *Baill.*—Dusogh. **Cadaba** farinosa *Forssk.*—Ditab. C. glandulosa *Forssk.*—Dukhul. C. heterotricha *Stocks*—Highi. **Cadia** purpurea *Ait.*—Salabma. **Caesalpinia** sp.—Jirma. **Calotropis** procera *Ait.*—Bon ad. **Canthium** bogosensis *Hutch. & E. A. Bruce*—Gorurgi. **Caralluma** speciosa *N.E. Br.*—Udab tis. **Chrysopogon** Aucheri *Stapf* var. quinquiplumis *Stapf*—Daremo. **Cissus** quadrangularis (*L.*) *Planch.*—Gaad. C. rotundifolia *Vahl*—Armo. **Combretum** tricanthum *Fres.*—Obol. **Commiphora** cuspidata *Chiov.*—Didin, Myrrh. C. erythraea *Engl.*—Hagar. C. lughensis *Chiov.*—Hagar ad. C. ogadensis *Chiov.*—Hagar medu. **Cordeauxia** edulis *Hemsl.*—Yeeb. **Cordia** Gharaf *Ehrenb.*—Mared. C. ovalis *R. Br.*—Mared.

Croton Cliffordii *Hutch. & E. A. Bruce*—Bahie. **Cymbopogon** Schoenanthus *Spreng.*—Aus Damer. **Delonix** elata (*L.*) *Gamble*—Lebi. **Dobera** glabra *Juss.*—Garas. **Dodonaea** viscosa *L.*—Hairimat. **Dracaena** schizantha *Bak.*—Morli. **Eragrostis** hararensis *Chiov.*—Gubungub. **Euphorbia** abyssinica *Lem.*—Hasadin. E. grandis *Lem.*—Hasadin. E. infausta *N.E. Br.*—Dibu. E. nubica *N.E. Br.*—Ergin. E. scoparia *N.E. Br.*—Mirhig. E. somalensis *Pax*—Fala fala. **Ficus** populifolia *Vahl*—Nidir. F. Sycomorus *L.*—Dare. F. vasta *Forssk.*—Berde. **Grewia** mollis *Juss.*—Debi ad. G. Schweinfurthii *Burret.*—Debi medu. G. tenax (*Forssk.*) *Fiori* –Duferu. **Hypoestes** Hildebrandtii *Lindau*—Ged waraba. **Indigofera** Ruspoli *Bak. f.*—Jelub. **Iphiona** rotundifolia *O. & H.*—Gegabot. **Juniperus** procera *Hochst.*—Deyib. **Lannea** malifolia *Hutch. & E. A. Bruce*—Bero. **Lawsonia** inermis *L.*—Elan. **Leptadenia** Spartum *Wight*—Morogh. **Maerua** sessiliflora *Gilg*—Ji-eh. M. somalensis *Pax*—Kalan. **Mimusops** Kummel *Hochst.*—Anjel. **Olea** chrysophylla *Lamk.*—Wigir. O. somalensis *Bak.*—Wigir. **Panicum** turgidum *Forssk.*—Dungara. **Pappea** Radlkoferi *Schweinf.*—Adadak. **Peucedanum** fraxinifolium *Hiern* -Ged bidawi. **Pistacia** falcata *Becc.*—Hraa mali. **Rhigozum** somalense *Hall. f.*—Binin. **Salsola** foetida *Del.*—Gulan. **Salvadora** persica *L.*—Adi. **Sansevieria** Ehrenbergii *Schweinf.* ex *Bak.*—Hig. **Sarcostemma** viminale *R. Br.*—Hangeyu. **Senecio** longiflorus (*DC.*) *O. & H.*—Godor. **Sideroxylon** Gillettii *Hutch. & E. A. Bruce.*—She. **Sporobolus** variegatus *Stapf* — Dihe. **Sterculia** Rivae *Chiov.* — Garaho. **Suaeda** fruticosa *Forssk.*—Horun. **Tamarindus** indica *L.*—Hamar. **Tamarix** nilotica *Ehrenb.*—Dot. **Terminalia** Brownei *Fres.*—Wob. **Turraea** parvifolia *Deflers*—Dornai. **Ziziphus** Hamur *Engl.*—Hamud. Z. mauritiana *Lam.*—Gob. Z. mucronata *Willd.*—Gob yer. **Zygophyllum** Hildebrandtii *Engl.*—Bal ad.

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Enumeration of the plants collected by Mr. J. B. Gillett in Somaliland and Eastern Abyssinia

J. Hutchinson and Eileen A. Bruce

Up to the present specimens from Somaliland have usually been rather meagre and have been collected by travellers without much botanical training and lacking in proper equipment. This is not the case with Mr. Gillett's collection, however. He was able to acquire abundant material of nearly every species he met with in flower or fruit, and it has been possible to distribute sets of duplicates to various herbaria on the continent of Europe*, and in addition one each to the Agricultural Department at Berbera, and the Forestry Department in Kenya.

This adds greatly to the value of the collection, and should at least assist in preventing the indiscriminate publication of superfluous names owing to lack of material. Great care has been taken to ascertain whether the species which were not determinable at Kew had been described in other herbaria, and we are particularly indebted to Professor Dr. Chiovenda, at Bologna, for much assistance and for describing several new species, and to botanists at other institutions. Our thanks are also due to our colleagues, Mr. C. E. Hubbard and Mr. E. Milne-Redhead, who have worked out the *Gramineae* and *Acanthaceae* respectively, to Mr. V. S. Summerhayes for the Orchids, to Miss C. I. Dickinson, who has identified the Lichens, Mr. H. N. Dixon the Mosses, and Mr. F. Ballard the Ferns.

The working up of this collection has demonstrated especially the close affinity of the Somali flora with that of Arabia, and in consequence many of Forsskal's names in his *Flora Arabica* have to take precedence over those used in the *Flora of Tropical Africa*. The species which are known only from Somaliland and Arabia are indicated in the enumeration. A large number of these North East Tropical plants seem to be distributed only as far south as Tanganyika Territory, in a few cases ranging eastwards through Arabia to India, especially to Scind.

The families and genera of flowering plants are arranged mainly after the sequence followed in Hutchinson and Dalziel's *Flora of West Tropical Africa*. The species are alphabetical, and scattered through the paper are descriptions of nearly fifty novelties.

Abbreviations, F.T.A.—*Flora of Tropical Africa.*
F.W.T.A.—*Flora of West Tropical Africa.*

Vernacular names and place names.—These are mainly written according to the Royal Geographical Society's system ii.

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* Sets have been distributed to Bologna, Paris, Berlin and Upsala.

MUSCI (by H. N. Dixon)

Erpodium Hanningtonii Mitt.

SOMALILAND: S. E. Auboba, long. 43° 4′ E., lat. 9° 59′ N., 1,620 m., Nov., No. 4605.

Orthotrichum diaphanum Schrad.

As above, No. 4605.

Funaria hygrometrica Hedw.

ABYSSINIA: Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,520 m., capsules red, Mar., No. 5286. 3,180 m., 5 Mar., No. 5369.

Leucodon dracaenae Vent.

ABYSSINIA: Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,340 m., green, Feb., No. 5134.

Lindbergia abbreviata (Schimp.) Broth.

ABYSSINIA: As above, No. 5133.

Mnium rostratum Schrad.

ABYSSINIA: Gara mulata Mt., 3,060 m., Mar., No. 5365.

Neckera remota Bry. eur.

ABYSSINIA: Sarerta Mt., long. 42° 19′ E., lat. 9° 30′ N., 2,400 m., green, fructifications red, Feb., No. 5183.

Oxyrrhynchium kenyae Dix. ined.

ABYSSINIA: Gara mulata Mt., 3,060 m., capsules reddish, Mar., No. 5364.

Pleurochaete Beccarii Vent.

SOMALILAND: Libah Hele Mt., long. 43° E., lat. 10° 20′ N., 1,770 m., forming cushions, Dec., No. 4709.

Pleuropus sericeus (Hornseh.) Broth.

ABYSSINIA: Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,430 m., fructifications reddish, Mar., No. 5438.

Tortula atrovirens (Sm.) Lindb.

SOMALILAND: Sigib Mt., long. 43° 11′ E., lat. 10° 19′ N., 1,560 m., Feb., No. 4997.

T. erubescens (C.M.) Broth.

ABYSSINIA: Sarerta Mt., long. 42° 19′ E., lat. 9° 30′ N., 2,100—2,400 m., brown, Feb., No. 5189.

LICHENES (by C. I. Dickinson)

Anaptychia leucomela Ach.

ABYSSINIA: Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,400 m., grey, Feb., No. 5141.

Leptogium cyanescens Körb.

ABYSSINIA: Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,250 m., thallus very dark green, fructifications dark brown, Mar., No. 5430.

Parmelia caperata Ach.

SOMALILAND: South East of Auboba, long. 43° 4′ E., lat. 9° 59′ N., 1,620 m., grey, Nov., No. 4607.

P. perlata Ach. var. *ciliata.*

SOMALILAND: Libah Hele Mt., long. 43° E., lat. 10° 20′ N., 1,560 m., Dec., No. 4699.

P. tiliacea Ach.

As above, No. 4699.

P. sp.

Abyssinia: Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,250 m., thallus green, fructifications brown, Mar., No. 5432.

Physcia stellaris Fr.

Somaliland: South East of Auboba, 1,620 m., 20 Nov., No. 4608.

Abyssinia: Yuka, 2,250 m., thallus pale grey, Mar., No. 5431.

Ramalina yemensis Nyl.

Abyssinia: Yuka, 2,250 m., fronds green erect, Mar., No. 5433.

Theloschistes chrysophthalmus Beltr.

Somaliland: Libah Hele Range, long. 43° E., lat. 10° 20′ N., 1,200 m., thallus grey, fructifications orange, Dec., No. 4686.

Usnea articulata Hoffm.

Somaliland: Libah Hele Mt., 1,770 m., yellowish grey, Dec., No. 4708. Vernac.—*Sarokh.*

U. longissima Ach.

Abyssinia: Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,340 m., Feb., No. 5130.

Xanthoria parietina Beltr.

Somaliland: S.E. Auboba, long. 43° 4′ E., lat. 9° 59′ N., 1,620 m., greenish yellow, Nov., No. 4606.

Abyssinia: Sarerta Mt., long. 42° 19′ E., lat. 9° 30′ N., 2,400 m., orange, Feb., No. 5190.

PTERIDOPHYTA (by F. Ballard)

Polypodiaceae.

Cystopteris fragilis (Linn.) Bernh. in Schrad. Neu. Journ. 1, 2: 27 (1806).

Abyssinia: Gara Mulata Mt., long. 41° 45′ E., lat. 9° 15′ N., 3,000 m., lower *Erica* thicket with *Juniperus*, Mar., No. 5371.

Dryopteris Schimperiana (Hochst.) C. Chr. Ind. Fil. 291 (1905).

Abyssinia: Kondudo Mt., 2,640 m., rank herbage on limestone slopes, No. 5227.

Arthropteris orientalis (Gmel.) O. Posth. in Rec. Trav. Bot. Neerl. 21: 218 (1924); Dryopteris orientalis (*Gmel.*) *C. Chr.*

Abyssinia: Gobelli, long. 41° 59′ E., lat. 9° 10′ N., 1,680 m., in lower evergreen formation beneath granite boulders, Mar., No. 5256.

Asplenium abyssinicum Fée Gen. Fil. (5me Mém.) 199 (1850–52).

Abyssinia: Gara Mulata Mt., long. 41° 45′ E., lat. 9° 15′ N., 3,000 m., in evergreen forest, Mar., No. 5375.

A. aethiopicum (Burm.) Becherer in Candollea 6: 23 (1935); A. praemorsum *Sw.*

Somaliland: Buramo, long. 43° 10′ E., lat. 10° N., 1,740 m., on gneiss slopes, Jan., No. 4849.

Abyssinia: Harar, long. 42° 6′ E., lat. 9° 18′ N., 1,920 m., crannies in limestone rocks, Feb., Nos. 5028, 5029.

A. monanthes Linn. Mant. Plant. 130 (1767).

ABYSSINIA: Boesesa Valley, long. 42° 18′ E., lat. 9° 29′ N., 2,160 m., evergreen forest near stream, on limestone, Feb., No. 5176.

Loxoscaphe theciferum (H. B. & K.) Moore var. *concinna* (Schrad.) C. Chr. in Dansk Bot. Ark. 7 : 104 (1932). Asplenium concinnum (*Schrad.*) *Kuhn.*

ABYSSINIA: Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,280 m., on shaded limestone rock near stream, Feb., No. 5202. Vernac.—*Afar boso.*

Pellaea calomelanos (Sw.) Link Fil. Sp. Hort. Berol. 61 (1841); P. hastata (*Thbg.*) *Prantl.*

SOMALILAND: Mt. Rarele, near Buramo, long. 43° 15′ E., lat. 10° N., 1,800 m., on mountain top, Dec., No. 4727.

P. quadripinnata (Forssk.) Prantl in Engl. Bot. Jahrb. 3 : 420 (1882).

ABYSSINIA: Gara Mulata Mt., long. 41° 48′ E., lat. 9° 15′ N., 2,700 m., on limestone slopes in burnt *Erica* thickets, Mar., No. 5313.

Cheilanthes coriacea Decne. in Arch. Mus. Hist. Nat. Paris 2 : 190 (1841). Pellaea somarioides *Bak.*

SOMALILAND: Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,110–1,200 m., in *Buxus* scrub, Oct., No. 4412. Mt. Rarele, near Buramo, long. 43° 15′ E., lat. 10° N., 1,740 m., Dec., No. 4732.

C. farinosa (Forssk.) Klf. Enum. Fil. 212 (1824).

ABYSSINIA: Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,520 m., in rank vegetation seral to *Podocarpus* forest, Feb., No. 5158.

Adiantum Capillus-Veneris Linn. Sp. Pl. 1096 (1753).

SOMALILAND: Auboba long. 42° 55′ E., lat. 10° 3′ N., 1170 m., by water, Nov., No. 4642.

ABYSSINIA: Geldid, long. 41° 48′ E., lat. 9° 15′ N., 2280 m. on damp shaded stones, Mar., No. 5394. Vernac.—*Sarokh.*

Actiniopteris australis (Linn. f.) Link Fil. Sp. Hort. Berol. 80 (1841).

SOMALILAND: Hargeisa, long. 44° E., lat. 9° 35′ N., 1,410 m., on sandstone rocks, Oct., No. 4261.

Pteris cretica Linn. Mant. 130 (1767).

ABYSSINIA: Gara Mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,790 m., in upper evergreen forest with *Hagenia*, Mar., No. 5349. Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,280 m., in deep shade of *Podocarpus* forest, Mar., No. 5411.

P. dentata Forssk. Fl. Aegypt–Arab. 186 (1775).

ABYSSINIA: Geldid, long. 41° 48′ E., lat. 9° 12′ N., 2,580 m., damp places in evergreen forest, Mar., No. 5294.

P. vittata Linn. Sp. Pl. 1074 (1753).

ABYSSINIA: Harar, long. 42° 6′ E., lat. 9° 18′ N., 1,920 m., in denuded evergreen scrub, Feb., No. 5025.

Polypodium lanceolatum Linn. Sp. Pl. 1082 (1753).

ABYSSINIA: Galla Pass, long. 42° 19′ E., lat. 90° 28′ N., 2,280 m., shaded limestone rock by stream, Feb., No. 5201.

Loxogramma lanceolata (Sw.) Pr. Tent. Pterid. 215 (1836).
ABYSSINIA: Near Yuka, long. 41° 40′ E., lat. 9° 25′ N., in *Podocarpus* forest, Mar., No. 5440.

LYCOPODIACEAE.

Lycopodium dacrydioides Bak. Handbk. Fern Allies 17 (1887).
ABYSSINIA: Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,130 m., in *Juniperus-Podocarpus* forest, Mar., No. 5425.

SELAGINELLACEAE.

Selaginella imbricata (Forssk.) Spring ex Dcne. in Arch. Mus. Paris 2: 193 (1841-42).
SOMALILAND: Dubriat Mt., long. 45° 10′ E., lat. 10° 22′ N., about 210 m., in rock crannies in ravine, Jan., No. 4789.
S. rupestris Spring in Mart. Fl. Bras. 1, 2: 118 (1840), (sens. lat.).
SOMALILAND: Libah Hele Range, 4,300 ft., 1 Dec., No. 4681. Sigib, 1,290 m., Feb., No. 4681A.
S. somaliensis Bak. in Journ. Bot. 1883: 82.
ABYSSINIA: S.E. of Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,100–2,550 m., on limestone slopes with *Juniperus* forest, Mar., No. 5405.

EQUISETACEAE.

Equisetum ramosissimum Desf. Fl. Atlant. 2: 398 (1800).
SOMALILAND: Buramo, long. 43° 10′ E., lat. 10° N., 1,260 m., on bank of large tug with flowing stream, Jan., No. 4874.

GYMNOSPERMAE.

TAXACEAE.

Podocarpus gracilior Pilger—F.T.A. 6, 2: 342.
ABYSSINIA: Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., tree, dioecious, up to 30 m., circumference of trunk 5·5 m., Feb., No. 5132. Vernac.—*Birbirsa. Sigba.*

CUPRESSACEAE.

Juniperus procera Hochst. ex A. Rich.—F.T.A. 6, 2: 336.
SOMALILAND: Simodi, long. 43° 30′ E., lat. 10° 5′ N., 1,740 m., up to 4 m., Nov., No. 4580. Vernac. *Deyib.*
ABYSSINIA: Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,100 m., Feb., No. 5109. Vernac.—*Sigib. Deid.*

GNETACEAE.

Ephedra Alte C. A. Mey.—F.T.A. 6, 2: 329.
SOMALILAND: Berdale Mt., long. 43° E., lat. 10° 20′ N., 1,380–1,710 m., shrub up to 2 m., yellow juice, Dec., No. 4682. Vernac.—*Aan orle.*

E. foliolata Boiss. & Kotschy ex Boiss. Diag. Ser. I, 7 : 101 (1846).

Aden : 300 m., 1 m., stems brittle, flowers yellowish, Mar., No. 5509.

ANGIOSPERMAE.

Dicotyledones.

Ranunculaceae.

Ranunculus oreophytus Del.—F.T.A. : 1 : 10.

Abyssinia : Kondudo Mt., long. 42° 20′ E., lat. 9° 27′ N., 2,760 m., near mountain top, in close sward, limestone soil, Feb., No. 5222.

R. pubescens Thunb. Prod. Pl. Cap. 94 (1800). R. pinnatus *Poir.*—F.T.A. 1 : 9.

Abyssinia : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,580 m., in evergreen forest by stream, limestone, Mar., No. 5355.

Thalictrum minus L.—F.T.A. 1 : 8.

Abyssinia : Kondudo Mt., long. 42° 20′ E., lat. 9° 27′ N., 2,700 m. (also abundant on Gara mulata Mt. above 2,700 m.) ; about 1–6 m. high ; rootstock bright yellow when cut ; leaves glaucous ; stamens yellow ; style purple ; Feb., No. 5214.

Menispermaceae.

Stephania abyssinica Walp.—F.T.A. 1 : 47 ; F.W.T.A. 1 : 74.

Abyssinia : Kondudo Mt., long. 42° 20′ E., lat. 9° 27′ N., 2,730 m., in rank herbage on limestone slopes, flowers dark purple, Feb., No. 5226.

Var. *tomentella* Oliv.—Diels in Engl. Pflanzenr. Menispermac. 270.

Abyssinia : Harar—Gobeli road, long. 42° 1′ E., lat. 9° 12′ N., 1,800 m., flowers greenish, leaves pubescent, Mar., No. 5254.

Cocculus pendulus (Forst.) Diels—F.W.T.A. 1 : 69.

Somaliland : Hargeisa, long. 44° E., lat. 9° 33′ N., 1,290 m., climber amongst Acacia trees, flowers greenish, berry red, Sept., No. 3955. Vernac.—*Hayab* or *Matkare.*

Piperaceae.

Peperomia abyssinica Miq.—F.T.A. 6, 1 : 153.

Abyssinia : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,400 m., epiphyte on tree trunks in remnants of Podocarpus forest, inflorescence green, leaves succulent, Feb., No. 5152.—Also in Eritrea.

P. reflexa A. Dietr.—F.T.A. 6, 1 : 155 ; F.W.T.A. 1 : 80.

Abyssinia : Yuka, long. 41° 40′ E., lat. 9° 25′ N., 1,980–2,130 m., in lower Juniper-Podocarpus forest on trees or limestone boulders, Mar., No. 5420.

Kissenia spathulata R. Br.—F.T.A. 2 : 501.

ADEN : 150 m., on lava, 1 m. high, flowers white, Mar., No. 5516.—Also in Arabia.

CAPPARIDACEAE.

Cleome brachycarpa (Forssk.) Vahl—F.T.A. 1 : 77 ; Chiov. Fl. Somal. 76.

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., viscid plant with yellow flowers, Sept., No. 3976. Vernac.—*Subugeleh ;* Kabalgabat pass, long 43° E., lat. 10° 20′ N., 1,080 m., on gneiss rocks, Dec., No. 4687. Vernac.—*Hawar ane ;* Berbera, long. 45° E., lat. 10° 25′, sea level, in sandy places, 1 Jan., No. 4739. Aden : 210 m., Mar., No. 5498.

C. droserifolia Del.—F.T.A. 1 : 77.

ADEN : 300 m., on lava, viscid herb 30 m. high, flowers pale cream with purple stripes, Mar., No. 5503.—Also in Eastern Sudan, Abyssinia and S. Arabia.

C. paradoxa R. Br.—F.T.A. 1 : 78 ; F.W.T.A. 1 : 83.

ADEN : 150 m., on lava, 1 m. high, flowers yellow with crimson veins, crushed leaves very aromatic, Mar., No. 5488.

C. pruinosa T. Anders. in Journ. Linn. Soc. 5 : Suppl. p. 3.

ADEN : 150 m., on lava, viscid herb 20 cm. high, flowers yellow, Mar., No. 5502.—Endemic.

C. scaposa DC.—Gilg & Benedict in Engl. Bot. Jahrb. 53 : 153 ; F.W.T.A. 1 : 83.

SOMALILAND : near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., 900 m., on stony slopes, an aromatic plant with yellow flowers and succulent leaves, Oct., No. 4333.—Also in Eastern Sudan through Arabia to Scind (India).

C. platysepala Gilg & Benedict in Engl. Bot. Jahrb. 53 : 161 (1915).

SOMALILAND : between Hargeisa and Aleyalaleh, long. 44° 18′ E., lat. 9° 57′ N., 810 m., on granite rocks, a small aromatic shrub 1 m. high with pink flowers, Oct., No. 4345.—Endemic.

Gynandropsis gynandra (Linn.) Briq. in Ann. Conserv. and Jard. Bot. Genève 17 : 382 (1914). G. pentaphylla *DC.*—F.T.A. 1 : 81.

SOMALILAND : Boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,290 m., flowers cream, Oct., No. 4125 ; Gorfulai, long. 43° 38′ E., lat. 10° 16′ N., 540 m., a viscid annual, Nov., No. 4560. Vernac.—*Darjo, Aiya.*

Maerua angolensis DC.—F.T.A. 1 : 86 ; Gilg & Benedict in Engl. Bot. Jahrb. 53 : 257 ; F.W.T.A. 1 : 84.

SOMALILAND : long. 43° 54′ E., lat. 9° 2′ N., 1,350 m., slender tree to 10 m., leaves dull green, flowers yellow, Oct., No. 4227 ; Auboba, long. 43° E., lat. 10° 6′ N., 1,710–1,800 m., on limestone slopes with *Olea, Acokanthera*, etc., Nov., No. 4630. Vernac.—*Ji-eh Lamaloye.*

M. crassifolia Forssk.—Gilg & Benedict in Engl. Bot. Jahrb. 53 : 250 ; F.W.T.A. 1 : 84.

Somaliland : near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., 960 m., on lava slopes, a shrub to 3 m. with cream flowers, Oct., No. 4314. Vernac.—*Ji-eh.*

M. sessiliflora Gilg—Gilg & Benedict in Engl. Bot. Jahrb. 53 : 248.

Somaliland : Boundary, long. 44° 15′ E., lat. 8° 55′ N., 1,260 m., in Acacia-Grass veldt, tree to 5 m. with greenish-cream flowers, Sept., No. 4084. Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., No. 4057. Vernac.—*Ji-eh.*—Endemic.

M. somalensis Pax—Gilg & Benedict in Engl. Bot. Jahrb. 53 : 259.

Somaliland : Biji, long. 44° 5′ E., lat. 10° 12′ N., 420 m. on sand hills, a shrub to 4 m. with succulent leaves, Oct., No. 4509. Vernac.—*Kalan.*

M. Hoehnelii Schweinf.—Gilg & Benedict in Engl. Bot. Jahrb. 53 : 241. M. campicola *Gilg & Benedict* l. c. 246.

Abyssinia : Gafra Valley, long. 42° 13′ E., lat. 9° 21′ N., 1,500 m., on granite in Acacia scrub or open woodland, bush to 3 m., with green flowers, Feb., No. 5247.

M. sphaerogyna Gilg & Benedict in Engl. Bot. Jahrb. 53 : 244.

Somaliland : Duwi Pass, long. 44° 15′ E. lat., 10° 5′ N., 1200 m. in Buxus scrub on south side of ridge, shrub to 2 m. with cream and green flowers, Oct., No. 4376 ; Rarele Mt., long. 43° 15′ E., lat. 10° N., 1,800 m., gneiss slopes in transition zone between Acacia open wood and evergreen scrub, Dec., No. 4730. Vernac.—*Gadū.*

Capparis tomentosa Lam.—F.T.A. 1 : 96 ; Gilg & Benedict in Engl. Bot. Jahrb. 53 : 189.

Abyssinia : Gafra Valley, long. 42° 13′ E., lat. 9° 21′ N., 1,500 m., on granite slopes in deciduous scrub, fragrant climber with greenish-yellow flowers, Feb., No. 5071. Vernac.—*Gombor.*

C. galeata Fresen.—F.T.A. 1 : 95 ; Gilg & Benedict, l.c. 189.

Somaliland : near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., 930 m., on stony alluvial slopes, a low shrub ½ m. high, flowers white fading to pink, fruit edible, Oct., No. 4332. Vernac.—*Goa, Goa Kulul.*

C. Rothii Oliv.—F.T.A. 1 : 97 ; Gilg & Benedict l.c. 197.

Abyssinia : Gafra Valley, long. 42° 13′ E., lat. 9° 21′ N., 1,500 m., in deciduous scrub, a fragrant climber with cream flowers, Feb., No. 5075. Vernac.—*Gombor.*

Cadaba farinosa Forssk.—F.T.A. 1 : 89 ; Gilg & Benedict l.c. 225.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., a bush with grey leaves and greenish flowers tinged with red, very good grazing for all stock, Sept., No. 3958.—Vernac.—*Ditab.*

C. glandulosa Forssk.—F.T.A. 1 : 89 ; Gilg & Benedict, l.c. 225.

Somaliland : near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., 960 m., on lava slopes facing south, a shrub to ½ m., flowers greenish with light yellow appendix, seeds bright red, good camel food, Oct., No. 4323. Vernac.—*Dukhul.* Aden : 150–450 m., on lava, Mar., No. 5505.

C. longifolia DC.—F.T.A. 1 : 90 ; Gilg & Benedict, l.c. 232.

Somaliland : Marmar range, western slopes, long. 42° 47′ E., lat. 10° 28′ N., 1,050 m., on mountain slopes in open scrub with *Commiphora,* a shrub to 3 m. with cream flowers, Nov., No. 4659. Vernac.—*Aina ma ais, Ji-eh.* Aden : 150–300 m., on lava, Mar., No. 5489.—Also in Eritrea and S. Arabia.

C. heterotricha Stocks—Gilg & Benedict, l.c. 228.

Somaliland : Between Burmado and Goton, long. 43° 16′ E., lat. 10° f′ N., 1,020 m., on limestone hills in lower Tree-Acacia open wood, a tree to 5 m. widespread but nowhere abundant ; trunk may become quite large, bark grey, smooth, flowers white, Nov., No. 4599. Vernac.—*Higlu.*—Also in S. Arabia east to Scind.

Boscia coriacea Pax—Gilg & Benedict, l.c. 211.

Somaliland : Harerat, long. 42° 49′ E., lat. 10° 21′ N., 990 m., on limestone rocks, shrub 2 m., flowers greenish, Nov., No. 4645. Vernac.—*Galangal, Etinabi.*

B. minimifolia Chiov. Miss. Stefan.—Paoli Somal. Ital. 19, t. 3, fig. A.

Somaliland : long. 44° 10′ E., lat. 8° 57′ N., 1,260 m., in Acacia-Grass veldt on deep red soil, also in *Commiphora* formation, a tree 3–4 m. with yellow flowers and grey leaves, Sept., No. 4094. Vernac.—*Megag.*—Endemic.

Courbonia decumbens A. Brogn.—F.T.A. 1 : 88 ; Gilg & Benedict, l.c. 222.

Somaliland : Elmis, long. 44° 14′ E., lat. 10° 22′ N., 50–6004 m., on mountain stopes among *Commiphora* and open scrub, a shrub to 1 m., Oct., No. 4499. Vernac.—*Schifawēn.*

C. virgata A. Brogn.—F.T.A. 1 : 88 ; Gilg & Benedict, l.c. 217.

Somaliland : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 990 m., on rocky slopes, a shrub to 1 m. with cream flowers, Oct., No. 4389.—Vernac.—*Schifawēn.*

Moringaceae.

Moringa aptera Gaertn.—F.T.A. 1 : 101.

Somaliland : Elmis, long. 44° 14′ E., lat. 10° 20′ N., 240 m., on lava slopes, shrub 4 m., stem very brittle, Oct., No. 4488. Vernac.—*Dumōk.*

Cruciferae.

Matthiola dimolehensis Bak. f. in Journ. Bot. 1898 : 2.

Somaliland : Biyo gora, long. 45° 8′ E. lat. 10° 25′ N., 90 m., in sandy bed of tug, herb with mauve flowers, Jan., No. 4830—Endemic.

M. elliptica R. Br. ex DC.—F.T.A. 1 : 57.

SOMALILAND : near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., 960 m., on lava rocks, shrublet up to 30 cm. high with white flowers, Oct., No. 4318. Vernac.—*Aho ;* Goton E., long. 42° 54′ E., lat. 10° 9′ N., 1,350 m., on limestone crags, Nov., No. 4638. Vernac.—*Geldabar.*

Farsetia grandiflora Fourn.—F.T.A. 1 : 62.

SOMALILAND : Buramo, Warieto tug, long. 43° 10′ E., lat. 10° 2′ N., 1,290 m., on rocky gneiss slope in Acacia open wood—evergreen scrub, flowers pale yellowish-brown, Jan., No. 4896.

Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., flowers white, Oct., No. 4222. Vernac.—*Iba ror.*

F. longisiliqua Decne.—F.T.A. 1 : 62.

SOMALILAND : Near Haili tug, long. 45° 20′ E., lat. 10° 22′ N., 210 m., on sub desert or eocene limestone slopes, about 1 m. high with greenish cream flowers, Jan., No. 4815. Vernac.—*Mero dameta, Aseye.*

Elmis, long. 44° 14′ E., lat. 10° 22′ N., 300–600 m., in *Commiphora* and open scrub on mountain slope, slender shrub to 2 m. high, 29 Oct., No. 4498. Aden, 150 m., flowers white, Mar., No. 5518.

F. longistyla Baker in Kew Bull. 1895 : 211.

SOMALILAND : Debrawen, long. 42° 49′ E., lat. 10° 26′ N., 960 m., in bare sandy bed of tug near permanent water, flowers lilac, Nov., No. 4670. Dubriat Mt., 150 m., long. 45° 10′ E., lat. 10° 22′ N., Jan., No. 4781. Biji, long. 44° 5′ E., lat. 10° 12′ N., 540 m., on the top of schist mountain, in Commiphora and open scrub, Oct., No. 4506. Vernac.—*Lanagar.*—Endemic.

F. ramosissima Hochst.—F.T.A. 1 : 63.

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., limestone escarpment, flowers yellow, Sept., No. 3973 ; Dubriat Mt., long. 45° 10′ E., lat. 10° 22′ N., 300 m., Jan., No. 4786 ; Buramo, long. 42° 10′ E., lat. 10° N., 1,500 m., Jan., No. 4852.

F. somalensis (Pax) Engl. Bot. Jahrb. 53 : 169.

Cleomodendron somalense *Pax* in Bericht. Deutsch. Bot. Geselsch. 9 : 32 (1891). F. fruticosa *Engl.* in Ann. Ist. Bot. Roma 9 : 249 (1902).

SOMALILAND : Ali Wein Mt., long. 45° 15′ E., lat 10° 24′ N., 600 m., limestone slopes on rocks in open scrub, a small shrub about ½ m. high, flowers white, Jan., N . 4821.—Endemic.

F. sp.

SOMALILAND : Ali Wein Mt., long. 45° 15′ E., lat. 10° 24′ N., 600 m., in open scrub on rocky limestone slopes, about 30 cm. high with white flowers, Jan., No. 4822.—Material not sufficient for description.

Nasturtium officinale (Linn.) R.Br.—F.T.A. 1 : 58.

ABYSSINIA : Boesesa valley, long. 42° 18′ E., lat. 9° 29′ N., 2,040 m., in small stream ; flowers white, Feb., No. 5174.—Vernac. *Mukerafo.* The Common Watercress.

Cardamine africana Linn.—F.T.A. 1 : 60.

Abyssinia : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,250–3,000 m., on limestone in damp places, flowers cream, Mar., No. 5291.

Arabis albida Stev. in DC. Syst. Veg. 2 : 217.

Abyssinia : Kondudo Mt., long. 42° 20′ E., lat. 9° 27′ N., 2,640–2,790 m., on limestone slopes, herb to 30 cm. with white flowers, Feb., No. 5207.

Diceratella sinuata (Franch.) Oliv. in James and Thrupp, Unknown Horn of Africa, 318 (1888) ; Chiov. Fl. Somal. 75.

Somaliland : Boundary, long. 44° 15′ E., lat. 8° 58′ N., 1,260 m., shallow soil in *Acacia Bussei* association, flowers pale mauve or white, Sept., No. 4105. Hargeisa, long. 44° E., lat. 9° 33′ N., 1,290 m., level ground in Tree-Acacia formation, flowers mauve, Sept., No. 3933. Buramo, long. 43° 10′ E., lat. 10° N., 1,260 m., in the gorge of a large tug, herb 20 cm. high with dark purple flowers, Jan., No. 4879.—Also in Socotra.

Erucastrum abyssinicum (A. Rich.) O. E. Schulz in Engl. Bot. Jahrb. 54 : Beibl. 119 : 56 (1916), et in Engl. Pflanzenr. 4, 105 : 98.

Abyssinia : Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,130 m., on shingle by stream, in open place in *Podocarpus* forest ; herb with yellow flowers, March, No. 5414. Vernac.—*Gomanza.*

Dipterygium glaucum Decne—F.T.A. 1 : 73.

Somaliland : Elmis, long. 44°. 14′ E., lat. 10° 20′ N., 230 m., sandy plain, suffruticose, fls. yellow, Oct., No. 4491. Vernac.—*Sar asēs.*—Also in Nubia, Arabia and N.W. India.

Sisymbrium Irio Linn.—F.T.A. 1 : 64.

Somaliland : Buramo, long. 44° 10′ E., lat. 10° 2′ N., 1,290 m., steep rocky slopes, fls. yellow, Jan., No. 4895.

Violaceae.

Viola abyssinica Steud.—F.T.A. 1 : 105 ; F.W.T.A. 1 : 97.

Abyssinia : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,850 m., fls. white, spur and throat yellow, with blue lines on lower petal, Mar., No. 5330.

Resedaceae.

Reseda ambylocarpa Fresen. in Mus. Denckenb. 2 : 108 (1837).

Aden : sea level to 450 m., on lava slopes coming down to the sea, flowers pale yellow, Mar., No. 5482.

R. bracteata Boiss. Diagn. Ser. I. 6 : 22 (1842).

Somaliland : between Hargeisa and Aleyalaleh, long. 44° 17′ E., lat. 9° 55′ N., 900 m., fls. cream, Oct., No. 4336. Vernac.—*Kahiye.*

R. oligomeroides Schinz in Bull. Herb. Boiss. 3 : 397 (1895).

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., fls. cream, Sept., No. 4019. Berbera, long. 45° E., lat. 10° 25′ N., in sand overlying coral rock, Jan., No. 4757. Vernac.—*Kahiye.*

Ochradenus baccatus Del.—F.T.A. 1 : 104.

Somaliland : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 870 m., small shrub 1 m. high ; fls. yellow, in open scrub on rocky slopes, Oct., No. 4393. Vernac.—*Miru.*

O. somalensis Bak. f. in Journ. Bot. 1896 : 52.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., open ground, fls. yellow green, eaten by camels, Sept., Nos. 3953 ; 3981. Vernac.—*Gosa mudoweyi.*—Endemic.

Polygalaceae.

Polygala abyssinica Fres.—F.T.A. 1 : 130 ; Chodat, Monogr. Polygalac., 388.

Somaliland : Barataga, long. 44° 1′ E., lat. 10° 5′ N., 1,290 m., grassy slopes amongst *Buxus*, calyx green, petals purple, Oct., No. 4517 ; Buramo, Dumuk tug, long. 43° 12′ E., lat. 10° 1′ N., 1,200 m., in gneiss gorge of tug, ½ m. high, Jan., No. 4882.

Abyssinia : Harar, long. 42° 6′ E., lat. 9° 18′ N., 1,920 m., Feb., No. 5013.

P. erioptera D.C.—Chodat, l.c. 342.

Somaliland : Burmado, long. 43° 50′ E., lat. 10° 13′ N., 960 m., shady side of mountain top, calyx green, petals crimson, Nov., No. 4542 ; Buramo, Warieto tug, long. 43° 10′ E., lat. 10° 2′ N., 1,080 m., on gneiss hills in Acacia open wood, Jan., No. 4911.

P. Hagerupii Exell in Journ. Bot. 1930 : 244. P. obtusata *Guil. & Perr.* non *DC.*

Somaliland : Berbera, sandy and shingly plain, 1 Jan., No. 4756. Aden : 210 m., on lava, Mar., No. 5490. Vernac.—*El Asti* (Somali).

P. obtusissima Hochst. ex Chodat, Monogr. Polygalac. 322 (1891). P. calcicola *Chodat* in Chodat Monogr. Polygalac. p. 326 (1891).

Somaliland : on the Abyssinia-Somaliland Boundary, long. 44° 15′ E., lat. 8° 55′ N., 1,260 m., in shady places among *Acacia* and on the grass veldt, flowers pink, Sept., No. 4085 ; Buramo, Warieto tug, long. 43° 10′ E., lat. 10° 2′ N., 1,080 m., smaller petals crimson, large outer ones yellow veined with crimson, rest of flower green, Jan., No. 4913. Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., Sept., No. 4219.

P. Quartiniana A. Rich. in Ann. Sci. Nat. Ser. ii. 14 : 263 (1840) ; Chodat, l.c. 328.

Somaliland : Boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,290 m., fls. green and crimson, Oct., No. 4120.

Abyssinia : Yuka, 1,980 m., evergreen scrub on steep limestone slopes, Mar., No. 5453.

P. Steudneri Chodat, l.c. 390.

Abyssinia : Kondudo Mt., 2,760 m., long. 42° 20′ E., lat. 9° 27′ N., rocky mountain top, flowers pale crimson with dark veins, Feb., No. 5219.

Crassula abyssinica A. Rich.—F.T.A. 2 : 388.

ABYSSINIA : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,700 m., in Juniperus-Podocarpus forest on steep limestone slopes, fls. rose-white, stem reddish succulent, Mar., No. 5345.

C. alsinoides (Hook. f.) Engl.—F.W.T.A. 1 : 103.

ABYSSINIA : Geldid, long. 41° 48′ E., lat. 9° 12′ N., 2,520 m., in ravines and light evergreen forest on damp shaded soil, flowers white, leaves succulent, Mar., No. 5287.

C. galunkensis Engl. Bot. Jahrb. 39 : 468 (1907).

SOMALILAND : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,200 m., on Basalt rocks in Buxus scrub, succulent, flowers white, Nov., No. 4413.

C. rivularis (Peter) Hutch. & E. A. Bruce, comb. nov. Tillaea rivularis *Peter*. C. Wrightiana *Bullock*.

ABYSSINIA : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,340 m., on border of lake, limestone, flowers mauve with darker centre, Mar., No. 5137.

Kalanchoe diversa N.E. Br. in Gard. Chron. 1902, 2 : 210.

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., on alluvium, flowers orange, Oct., No. 4235. Vernac.—*Mantera*.—Endemic.

K. lanceolata Pers. Synop. 1 : 446 (1805). K. glandulosa *Hochst*.—F.T.A. 2 : 396.

SOMALILAND : near Daba Bur, long. 43° 6′ E., lat. 9° 59′ N., 1,470 m., in tree Euphorbia wood in deep soil, flowers orange, Nov., No. 4614. Vernac.—*Bibile*.

K. Quartiniana A. Rich.—F.T.A. 2 : 391.

ABYSSINIA : Galla Pass, long. 42° 19′ E., lat. 9° 25′ N., 2,340 m., on limestone, flowers pink, 22 Feb., No. 5129. Vernac.—*Lugo*.—Endemic.

K. somaliensis Baker in Kew Bull. 1895 : 214, et ex Hook. f. Bot. Mag. t. 7831 (1902).

SOMALILAND : Hargeisa, 1,260 m., in shade of Acacias, leaves whitish, flowers cream, to ½ m. high, Sept., No. 4068. Vernac.—*Wahara bifiye*.

K. stenosiphon Britten—F.T.A. 2 : 395.

SOMALILAND : Buramo-Warieto tug, long. 43° 10′ E., lat. 10° 2′ N., 1,080 m., on alluvium with Sanseviera, in Acacia association, flowers salmon, leaves succulent, 1 m. high, Jan., No. 4905.

K. citrina Schweinf. in Engl. Pflanzenw. Afrikas 3, 1 : 285 (1915).

SOMALILAND : 20 m. S. of Hargeisa, long. 44° E., lat. 9° 20′ N., 1,380 m., in tree Acacia-Aloe-Grass country, flowers cream, Oct., No. 4232. Vernac.—*Mantera*.—Also in Eritrea and Arabia.

Umbilicus botryoides Hochst.—F.W.T.A. 1 : 105.

SOMALILAND : Mt. Wobleh, long. 43° 17′ E., lat. 10° 15′ N., 1,620 m., beneath Junipers, Feb., No. 4989.—Also in Mts. of Abyssinia and Uganda, and on Cameroons Mt.

Cotyledon Barbeyi Schweinf. ex Penzig in Att. Congr. Bot. Genev. 1893 : 341.

Somaliland : Simodi, long. 43° 30′ E., lat. 10° 5′ N., 1,500–1,740 m., on mt. slopes in scattered Buxus-Acokanthera scrub, 1·5 m. high, leaves whitish, flowers drooping, pale yellow, Nov., No. 4571. Vernac.—*Mtera.*

Sempervivum leucoblepharum (Webb ex A. Rich.) Hutch. & E. A. Bruce, comb. nov. Aeonium leucoblepharum *Webb* ex *A. Rich.* Fl. Abyss. 1 : 314 (1847). S. chrysanthum *Hochst.*

Abyssinia : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,760 m., on limestone cliffs and sometimes epiphytic on trees, flowers yellow, leaves red tinged, Mar., No. 5363.

Caryophyllaceae.

Arenaria Schimperi (Hochst.) Oliv. F.T.A. 1 : 142.

Abyssinia : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,910 m., on limestone rocks, fls. white, Mar., No. 5314.

A. serpyllifolia L.—F.T.A. 1 : 142.

Abyssinia : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,640 m., Mar., No. 5342.

Somaliland : Dobo Pass, long. 44° 15′ E., lat. 10° 15′ N., 1,200 m., in shady crannies, fls. white, Feb., No. 4972.

Cerastium africanum Oliv.—F.W.T.A. 1 : 110.

Abyssinia : Kondudo Mt., long. 42° 20′ E., lat. 9° 27′ N., 2,700 m., fls. white, Feb., No. 5215.

Gypsophila montana Balf. f. in Proc. Roy. Soc. Edinb. 11 : 501 (1882).

Aden : 150 m., on lava, flowers white, Mar., No. 5504.—Also in S. Arabia and Socotra.

Silene chirensis A. Rich. Fl. Abyss. 1 : 44 (1847)—F.T.A. 1 : 139, sub S. Burchellii.

Abyssinia : Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,250 m., open grass scrub, flowers cream to pink, Mar., No. 5436.

S. flammulifolia Steud.—F.T.A. 1 : 139.

Abyssinia : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,730 m., limestone rocks, Mar., No. 5306—Also in Eritrea and Arabia.

Molluginaceae.

Gisekia pharnaceoides Linn.—F.T.A. 2 : 593 ; F.W.T.A. 1 : 113.

Somaliland : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 840 m., on bare sand in valley, flowers white, Oct., No. 4428 ; Afard, 540 m., Oct., No. 4459 ; Weranwis valley, 750 m., Nov., No. 4534 ; Dobo Pass, 1,200 m., Feb., No. 4955.

Mollugo Cerviana Seringe—F.T.A. 2 : 591 ; F.W.T.A. 1 : 114.

Somaliland : Gorfulai, long. 43° 38′ E., lat. 10° 16′ N., 540 m., in sandy bed of tug, flowers pale, Nov., No. 4559.

Orygia decumbens Forssk.—F.T.A. 2 : 589.

SOMALILAND : Junction of tugs, long. 44° 18′ E., 9° 57′ N., 810 m., stony bed of tug, flowers crimson, Oct., No. 4349.

FICOIDACEAE.

Trianthema pentandra Linn.—F.T.A. 2 : 588 ; F.W.T.A. 1 : 115.

SOMALILAND : Boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,290 m., Oct., No. 4128 ; Buramo-Warieto tug, 1,080 m., Feb., No. 4920.

T. crystallinum Vahl—F.T.A. 2 : 587.

SOMALILAND : Berbera, sea level, on sand by the sea, flowers yellow, Jan., No. 4744. Vernac.—*Daran ad.*

PORTULACACEAE.

Portulaca oleracea Linn.—F.T.A. 1 : 148 ; F.W.T.A. 1 : 116.

SOMALILAND : Boundary 7 miles W. of long. 43° 54′ E., lat. 9° 2′ N., 1,350 m., succulent, flowers yellow, Oct., No. 4225. Hargeisa, 1,290 m., Oct., No. 4238. Vernac.—*Aiyo.*

P. quadrifida Linn.—F.T.A. 1 : 49 ; F.W.T.A. 1 : 116.

SOMALILAND : boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,290 m., flowers yellow, Oct., No. 4137. Near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., 930 m., on stony ground, Oct., No. 4303. Afard, long., 44° 8′ E., lat. 10° 10′ N., 600 m., on stony slopes, Oct., No. 4476. Dobo Pass, long. 43° 15′ E., 10° 15′ N., 1,200 m., open wood, Feb., No. 4961. Vernac.—*Hadu as, Dananiso.*

P. somalica N.E. Br. in Gard. Chron. 1886, 2 : 134.

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., in bare alluvium, flowers yellow, 25 Sept., No. 4049. Afard, long. 44° 8′ E., lat. 10° 8′ N., 960 m., in stony place in open Acacia wood, flowers yellow, 25 Oct., No. 4466. Vernac.—*Hadu Sagaro, Dan aniso.* Endemic.

P. Wightiana Wall. Cat. N. 6845 ; Fl. Brit. Ind. 1 : 247 (1874).

SOMALILAND : Afard, No. 4462.—Also in Madras ; a new record for Africa.

POLYGONACEAE.

Polygonum acuminatum H.B. & K.—F.T.A. 6. 1 : 112 ; F.W.T.A. 1 : 120.

ABYSSINIA : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,340 m., on limestone, flowers pink, Feb., No. 5138. Harar, long. 42° 10′ E., lat. 9° 20′ N., 1,740 m., on granite in stream bed, flowers white touched with pink, Feb., No. 5035.

P. senegalense Meisn.—F.T.A. 6, 1 : 111 ; F.W.T.A. 1 : 120.

ABYSSINIA : Harar, long. 42° 10′ E., lat. 9° 20′ N., 1,740 m., on granite in a stream bed, flowers pink, Feb., No. 5036.

SOMALILAND : Buramo, long. 43° 10′ E., lat. 10° N., 1,260 m., Jan., No. 4876.

Rumex nepalensis Spreng.—F.T.A. 6, 1 : 117 ; F.W.T.A. 1 : 120.

Abyssinia : Galla Pass, long. 42° 9′ E., lat. 9° 28′ N., 2,250 m., flowers dark red, Feb., No. 5164. Vernac.—*Arab-sari.*

R. nervosus Vahl.—F.T.A. 6, 1 : 116.

Abyssinia : Harar, long. 42° 6′ E., lat. 9° 18′ N., 1,920 m., on limestone, weak ascending shrub, flowers pale green flushed with red, Feb., No. 5027.

Oxygonum atriplicifolium Martelli var. *sinuatum* Baker—F.T.A. 6, 1 : 101.

Somaliland : Dobo Pass, long. 43° 15′ E., lat. 10° 15′ N., 1,200 m., on Gneiss in Acacia open wood, flowers pink, leaf margin and stem base red, Feb., No. 4951.

Illecebraceae.

Cometes abyssinica R. Br.—F.T.A. 6, 1 : 14.

Aden : 1,500 ft., fls. green, Mar., No. 5,487.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 35′ N., 1,410 m., on sandstone, flowers pale, Sept., No. 4027.

Corrigiola litoralis Linn.—F.T.A. 6, 1 : 12.

Abyssinia : Mulka jibri, long. 42° 16′ E., lat. 9° 24′ N., 1,620 m., on sand by stream, flowers green and white, Feb., No. 5080. Vernac.—*Moka ija.*

Pollichia campestris Ait.—F.T.A. 6, 1 : 10.

Somaliland : Mt. Wobleh, long. 43° 17′ E., lat. 10° 15′ N., 1,530 m., on gneiss rock in shade of Junipers, flowers greenish, Feb., No. 4984.

Phytolaccaceae.

Phytolacca dodecandra L'Hérit.—F.T.A. 6, 1 : 97 ; F.W.T.A. 1 : 121.

Abyssinia : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,250 m., usually near houses, Feb., No. 5165. Vernac.—*Ndod.*

Chenopodiaceae.

Chenopodium Botrys Linn.—F.T.A. 6, 1 : 79.

Abyssinia : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,670 m., in Juniper-Podocarpus forest on steep limestone slopes, flowers yellow green, Mar., No. 5343.

C. murale Linn.—F.T.A. 6, 1 : 78.

Somaliland : Boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,290 m., 2 Oct., No. 4132.—Vernac.—*Aiyu Guri.*

C. opulifolium Schrad.—F.T.A. 6, 1 : 78.

Somaliland : Boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,290 m., Oct., No. 4129.

Suaeda fruticosa Forssk.—F.T.A. 6, 1 : 91.

Somaliland : Kabri Bahr, long. 43° 44′ E., lat. 10° 20′ N., 450 m., on fringe of Tamarix thicket, shrub to 2 m., flowers green, leaves succulent, Nov., No. 4544. Berbera, sea level, sand or mud by the sea, Jan., No. 4743. Vernac.—*Hodon.*

S. vermiculata Forssk.—F.T.A. 6, 1 : 92.

SOMALILAND : Berbera, 0·4 m., fls. green, Jan., No. 4746. Vernac.—*Dinas.*

Salsola Bothae Boiss.—F.T.A. 6, 1 : 90 ; Blatter, Flora of Aden, 312. Aden : 210 m., on lava in sub-desert, small shrub to 30 cm., flowers greenish, Mar., No. 5477 ; SOMALILAND : Hargeisa, 1,290 m., on alluvium, Sept., No. 4062 ; Berbera, 30 m., on shingly plain, stems glaucous, Jan., No. 4760. Debrawen, 990 m., Feb., No. 4939. Vernac.—*Goso mudo weyi, Mirgi edalis* (Somali).—Also in S. Arabia.

S. crassa M.Bieb.—F.T.A. 6, 1 : 88.

SOMALILAND : Dubar, long. 45° 5′ E., lat. 10° 20′ N., 300 m., shrublet 40 cm., whitish, Jan., No. 4767. Vernac.—*Habugh.*

S. foetida Del.—F.T.A. 6, 1 : 87.

SOMALILAND : Duwi pass, long. 44° 15′ E., lat. 10° 5′ N., 1,050 m., in tree Acacia-grass community, small shrub 4 m., flowers white tinged with pink, Oct., No. 4372. Vernac.—*Gulan.*

Pleuropterantha Revoilii Franch. in Revoil Pays Çomalis 59, t. 5 (1882).

SOMALILAND : Hargeisa, 1,290 m., by small tug, flowers cream, Sept., No. 3988 ; Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., Oct., No. 4207 ; Junction of tugs, long. 44° 18′ E., lat. 9° 57′ N., 810 m., on granite rocks, Oct., No. 4348 ; Weranwis Valley, long. 43° 50′ E., lat. 10° 15′ N., 480 m., in open Commiphora scrub, wings of fruit reddish, root used as soap, Nov., No. 4529 ; Berbera, sea level, sandy places near the sea, flowers white and purplish, Jan., No. 4745 ; Hills west of Wadi Haiti, long. 45° 20′ E., lat. 10° 22′ N., 230 m., shrub 1·5 m., Jan., No. 4814. Vernac.—*Ged Hajin, Iber ror, Ul as.*—Endemic.

Saltia papposa (Forssk.) Moq.—Blatter, Flora of Aden, 301 (1915).

ADEN : 150–450 m., on lava, a shrub 2 m. high, flowers whitish, Mar., No. 5491.—Also in S. Arabia.

AMARANTHACEAE.

Celosia populifolia Moq.—F.T.A. 6, 1 : 24.

SOMALILAND : Afard, long. 44° 8′ E., lat. 10° 10′ N., 600 m., among rocks in Commiphora bush, shrub 2 m., flowers dull red, Oct., No. 4475. Vernac.—*Ged lalis.*

Amaranthus oleraceus Linn.—F.T.A. 6, 1 : 34 ; F.W.T.A., 1 : 125.

SOMALILAND : Buramo Warieto tug, 1,080 m., Feb., No. 4919a.

A. graecizans Linn.—F.T.A. 6, 1 : 34.

With above, No. 4919b.

Aerva lanata Juss.—F.T.A. 6, 1 : 39.

SOMALILAND : Jalelo, long. 44° 14′ E., lat. 9° 45′ N., 1,080 m., on schist rocks, flowers greenish, Oct., No. 4295 ; Aden, 210 m., on lava slopes in sub-desert, Mar., No. 5478.

A. tomentosa Forssk.—F.T.A. 6, 1 : 37 ; F.W.T.A. 1 : 125.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., in tree-Acacia formation, Sept., No. 3932 ; Debrawen, long. 42° 49′ E., lat. 10° 26′ N., 930 m., Nov., No. 4649 ; 4650. Vernac.—*Sorna* or *Wanad*.

Pupalia lappacea Juss.—F.T.A. 6, 1 : 47 ; F.W.T.A. 1 : 127.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., level ground among aloes and in tree-Acacia formation, flowers white, Sept., No. 3938. Vernac.—*Marabob*.

Psilotrichum gnaphalobryum (Hochst.) Schinz in Engl & Prantl Pflanzenfam. 16 c : 60 (1934).

Somaliland : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 840 m., climber, flowers cream, Oct., No. 4392.

Psilotrichum gracilipes Hutch. et E. A. Bruce, sp. nov. affinis *P. gnaphalobryo* (Hochst.) Schinz, sed floribus longe et graciliter pedicellatis facile distinguitur.

Herba basi lignosa, circiter 25 cm. alta ; caules molliter tomentosi. *Folia* anguste lanceolata ad ovata, apice subacuta, basi in petiolum sensim angustata, 2·5–4 cm. longa, usque ad 1·3 cm. lata, utrinque breviter pubescentia, juniora sericea ; nodi longe pilosi. *Inflorescentia* laxe paniculata, ramis et ramulis gracilibus glabrescentibus ad angulos 45° patentibus ; bracteae lineares, virides, usque ad 2 cm. longae ; pedicelli gracillimi, usque ad 1·5 cm. longi, plerumque apice florem rudimentarium gerentes ; bracteolae 2, late ovato-triangulares, uninerviae, hyalinae, 1 mm. longae. *Sepala* elliptico-lanceolata, apice subacuta, 3-nervia, 3 mm. longa, 1–1·25 mm. lata, patule pubescentia. *Filamenta* 1 mm. longa ; antherae 0·15 mm. longae. *Ovarium* late ovoideum, glabrum ; stylus 0·75 mm. longus.

Somaliland : Debrawen, long. 43° 10′ E., lat. 10° 5′ N., 1,020 m., on stony limestone hill, flowers dull red, 4 Feb., No. 4937 (type in Kew Herb.).

Sericocomopsis pallida (C.B.Cl.) Schinz. in Engl. Bot. Jahrb. 21 : 185 (1895). Cyphocarpa pallida *C.B.Cl.*—F.T.A. 6, 1.: 54.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., level ground near tug in shelter of aloes, ½ m. high, flowers white, Sept., No. 3935. Boundary Pillar 93, No. 4214. Vernac.—*Harbo*.

Achyranthes aspera Linn.—F.T.A. 6, 1 : 63 ; F.W.T.A. 1 : 128.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., level ground near tug in shade of Acacias, flowers reddish, Sept., No. 3924.

Linaceae.

Linum usitatissimum Linn.—F.T.A. 1 : 269.

Abyssinia : Mulka jibri, long. 42° 16′ E., lat. 9° 24′ N., 1,620 m., flowers blue, Feb., No. 5076.

Tribulus cistoides Linn.—DC. Prod. 1 : 703 (1824). Tribulus terrestris var. cistoides.—F.T.A. 1 : 284.

SOMALILAND : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 840 m., in grazed valley, a prostrate herb with yellow flowers, Oct., No. 4430 ; Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., Sept., No. 3975. Vernac.—*Go-ondo.*

T. mollis Ehrenb. in Schweinf. Fl. Aethiop. 29 (1867).

SOMALILAND : Berbera, on sandy plain, a prostrate herb with pale yellow flowers, Jan., No. 4747. Vernac.—*Gahad.*

T. terrestris Linn.—F.T.A. 1 : 283 ; F.W.T.A. 1 : 136, fig. 53.

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., prostrate plant with yellow flowers, Sept., No. 3970. Vernac.—*Gohondo.*

Zygophyllum Hildebrandtii Engl. in Ann. Inst. Bot. Roma 7 : 15 (1897).

SOMALILAND : Las Dawan, long. 45° 12′ E., lat. 10° 20′ N., 180 m., in sub-desert especially near tugs, a shrub to 2 m., with pink flowers, Jan., No. 4809. Vernac.—*Bal ad.*—Endemic.

Z. simplex Linn.—F.T.A. 1 : 285 ; Chiov. Fl. Somal. 110.

SOMALILAND : near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., 990 m., on sandy soil between lava rocks, prostrate herb with yellow flowers, Oct., No. 4317.

ADEN : 150 m., on lava, Mar., No. 5515. Vernac.—*Kabogh hois* (Somal.).

Fagonia Bruguieri DC. Prodr. 1 : 704 (1824)—for synonymy *see* Hutch. in Kew Bull. 1931 : 164.

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., on aeroplane ground, flowers pink, Sept., No. 3978. Vernac.—*Gori-e ka halis, Anan ad.*

F. parviflora Boiss.—Diagn. Ser. I, 8 : 124 (1849).

ADEN : 150 m., on lava, plant with pink flowers and sub-succulent leaves, Mar., No. 5520.

F. sinaica Boiss.—Diagn. Ser. I, 1 : 61 (1842).

SOMALILAND : Dubriat Mt., long. 45° 10′ E., lat. 10° 22′ N., 150–420 m., limestone slopes, flowers pink, stipules spiny, plant rather viscid, Jan., No. 4793.—First record for Tropical Africa.

Kelleronia Gilletii Bak. f. in Journ. Bot. 1898 : 6.

SOMALILAND : Las Dawan, long. 45° 12′ E., lat. 10° 20′ N., 180 m., on stony slopes in lower open scrub, a slender shrub to 1·5 m., flowers a brilliant copper colour, bell-shaped, Jan., No. 4813. Dubriat Mt., long. 45° 10′ E., lat. 10° 22′ N., 210 m., in limestone ravines, a shrub to 2 m., with bright glossy yellow flowers 5 cm. in diameter, Jan., No. 4788. Vernac.—*Mija aseye.*—Endemic.

GERANIACEAE.

Monsonia biflora DC.—F.T.A. 1 : 290.

SOMALILAND : Rarele Mt., near Buramo, long. 43° 15′ E., lat. 10° N., 1,800 m., among grass on gneiss slopes, flowers pale lilac or pink, Dec., No. 4731.

Geranium simense Hochst.—F.T.A. 1 : 291 ; F.W.T.A. 1 : 138.
Abyssinia : Kondudo Mt., long. 42° 20′ E., lat. 9° 27′ N., 2,640 m., on limestone, creeping herb, flowers pale pink, Feb., No. 5213.

Pelargonium glechomoides A. Rich.—F.T.A. 1 : 294.
Somaliland : Simodi, long. 43° 30′ E., lat. 10° 5′ N., 1,500–1,740 m., in *Buxus-Acokanthera* scrub, flowers pink with crimson line, Nov., No. 4569. Vernac.—*Berdid.*

P. multibracteatum Hochst. ex A. Rich.—F.T.A. 1 : 293.
Abyssinia : Harar, long. 42° 10′ E., lat. 9° 20′ N., 1,740 m., in evergreen scrub, corolla white, Feb., No. 5045.

P. quinquelobatum Hochst. ex A. Rich.—F.T.A. 1 : 293.
Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,440 m., limestone scarp, flowers greenish, leaves rather succulent, Sept., No. 4058.

Oxalidaceae.

Oxalis corniculata Linn.—F.T.A. 1 : 296.
Somaliland : Dobo Pass, long. 43° 15′ E., lat. 10° 15′ N., 1,200 m., Feb., No. 4949.
Abyssinia : Harar, long. 42° 6′ E., lat. 9° 18′ N., 1,890 m., Feb., No. 5016.

Lythraceae.

Lawsonia inermis Linn.—F.T.A. 1 : 143.
Somaliland : Jalelo, long. 44° 14′ E., lat. 9° 45′ N., 1,080 m., sandy stream bank, shrub 5 m., Oct., No. 4299. Vernac.—*Elan.*

Woodfordia uniflora (A. Rich.) Koehne in Engl. Bot. Jahrb. 1 : 333 (1881).
Abyssinia : Harar, long. 42° 8′ lat. 9° 18′ N., 1,830 m., on limestone slopes, 0·3 m., flowers red, Mar., No. 5248. Vernac.—*Tutano.*

Lythrum rotundifolium Hochst. ex A. Rich.—F.T.A. 2 : 465.
Abyssinia : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,250 m., on limestone, flowers pink, Mar., No. 5166.

Ammannia baccifera Linn.—F.T.A. 2 : 478.
Somaliland : Debrawen, long. 42° 49′ E., lat. 10° 20′ N., 960 m., by stream, flowers greenish, Nov., No. 4671. Vernac.—*Bi-es.*

Onagraceae.

Epilobium hirsutum Linn.—F.T.A. 2 : 487.
Abyssinia : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,250 m., by stream, 1·5 m., flowers rose, Feb., No. 5168.

E. stereophyllum Fresen.—F.T.A. 2 : 487. E. fissipetalum *Steud.*
Abyssinia : Gara mulata Mts., long. 41° 45′ E., lat. 9° 15′ N., 3,000 m., evergreen forest, flowers pale pink, Mar., No. 5374.

Lasiosiphon glaucus Fres.—F.T.A. 6, 1 : 230 ; F.W.T.A. 1 : 151.

ABYSSINIA : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,400 m., on limestone in remnants of evergreen forest, graceful tree 10 m. high, flowers yellow, Feb., No. 5153.

L. somalensis (Franch.) H.H.W.Pears.—F.T.A. 6, 1 : 229.

SOMALILAND : Hargeisa, 1,290 m., on dry alluvium, flowers bright yellow, Sept., No. 4004 ; Liba Hele Mts., Wab wanak peak, long. 43° E., lat. 10° 20′ N., 1,650 m., in Buxus-Juniperus scrub, ½ m. high, Dec., No. 4706. Vernac.—*Balle, Usar.*

var. *glabra* H.H.W.Pears.

SOMALILAND : Hargeisa, 1,350 m., on stony hills, flowers yellow, Sept., Nos. 4021, 4022.—Endemic.

NYCTAGINACEAE.

Commicarpus plumbagineus (Cav.) Standley in Contrib. U.S. Nat. Herb. 18 : 101 (1916). Boerhaavia plumbaginea *Cav.*—F.T.A. 6, 1 : 6 ; F.W.T.A. 1 : 153.

SOMALILAND : Hargeisa, 1,290 m., flowers white, Sept., No. 3904. Vernac.—*Ged Irman.*

ABYSSINIA : N.E. of Harar, long. 42° 16′ E., lat. 90° 20′ N., 1,740 m., in hedgerows and evergreen scrub, climber with white flowers, Feb., No. 5040. Vernac.—*Koko bala.*

Commicarpus verticillatus (Poir.) Standl. var. *puberulus* Hutch. et E. A. Bruce, var. nov., a typo planta ubique puberula differt.

SOMALILAND : Hargeisa, 1,410 m., flowers bright pink, leaves whitish, Oct., No. 4247. Vernac.—*Ged Irman.*—Endemic.

Boerhaavia diffusa Linn. Sp. Pl. 1 : 3 (1753).

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., prostrate, flowers red, fruit sticky, Sept., No. 3907. Vernac.—*Ged Irman.*

B. elegans Choisy—F.T.A. 6, 1 : 3.

SOMALILAND : Junction of tugs, long. 44° 18′ E., lat. 9° 57′ N., 810 m., flowers pale, Oct., No. 4346.

ADEN : 210 m., flowers pinkish, Mar., No. 5493, 5497. Vernac.—*Ula aso* (Somali).

B. repens Linn.—F.T.A. 6, 1 : 4.

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., flowers pinkish, prostrate, Sept., No. 3969. Afard, long. 44° 8′ E., lat. 10° 10′ N., 540 m., flowers pale pink, minute, Oct., No. 4452. Vernac.—*Kaboh Hois, Dalagh.*

B. viscosa Lag. & Rodr. in Anal. Cienc. Nat. 4 : 256 (1801).

SOMALILAND : Berbera, 90 m., flowers pink, Jan., No. 4763. Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,140 m., viscid,Oct., No. 4406. Vernac.—*Dalagh.*

Pittosporum abyssinicum Del.—F.T.A. 1 : 124.

SOMALILAND : Mt. Wobleh, long. 43° 17′ E., lat. 10° 15′ N., 1,740–1,770 m., on mountain top with *Juniperus*, tree to 5 m., seed orange red, Nov., No. 4589. Auboba, long. 43° E., lat. 10° 6′ N., 1,770 m., on limestone slopes, with *Olea* etc., graceful tree 4 m., Nov., No. 4628.

ABYSSINIA : Geldid, long. 41° 48′ E., lat. 9° 15′ N., 2,400 m., in *Juniperus* forest, tree 6 m., flowers greenish yellow, Mar., No. 5389. Vernac.—*Gedad*.

Pittosporum lanatum Hutch. et E. A. Bruce, sp. nov. affinis *P. abyssinicae* Hochst. sed foliis vix acuminatis infra lanato-tomentosis, sepalis valde imbricatis extra tomentosis differt.

Arbor 7 m. alta ; ramuli hornotini adpresse pubescentes, circiter 5 mm. crassi. *Folia* late oblanceolata, apice obtusa vel leviter obtuse acuminata, basi angustata, 6–9 cm. longa, 2–3 cm. lata, chartacea, supra intense viridia et parce pubescentia, infra molliter lanato-tomentosa ; nervi laterales utrinsecus circiter 8, infra prominuli ; petioli 1 cm. longi, adpresse pubescentes. *Cymae* terminales, pluriflorae, ubique adpresse pubescentes ; pedicelli 3–4 mm. longi. *Sepala* valde imbricata, late ovata, 4 mm. longa, 3 mm. lata, extra tomentosa. *Petala* oblongo-oblanceolata, apice rotundata, 9 mm. longa, 3 mm. lata, basin versus trinervia, glabra. *Filamenta* 4 mm. longa ; antherae 2 mm. longae. *Ovarium* ellipsoideum, tomentosum, 3 mm. longum ; stylus glaber.

ABYSSINIA : Kondudo Mt., long. 42° 20′ E., lat. 9° 27′ N., 2,580 m., on limestone slopes, tree 7 m., flowers yellow, scented, 24 Feb., No. 5228 (type in Kew Herb.).

FLACOURTIACEAE.

Oncoba spinosa Forssk.—F.T.A. 1 : 115 ; F.W.T.A. 1 : 161, fig. 67.

ABYSSINIA : Gafra valley, long. 42° 13′ E., lat. 9° 21′ N., 1,500 m., on granite near stream, flowers white, Feb., No. 5236. Vernac.—*Akoko*.

Flacourtia hirtiuscula Oliv. forma glabra.—F.T.A. 1 : 121.

ABYSSINIA : Gafra valley, on granite near stream, tree 6 m., No. 5239.

Dovyalis abyssinica (Clos.) Warb. in Engl. Pflanzenfam. 3, 6A : 44 (1893). Aberia abyssinica *Clos*.—F.T.A. 1 : 121.

ABYSSINIA : Mulkajibri, long. 42° 16′ E., lat. 9° 24′ N., 1,800–2,340 m., on granite, bushy tree 5 m., flowers green, Feb., No. 5092. Vernac.—*Koshum*.

D. verrucosa Warb. l.c. Aberia verrucosa *Hochst*.—F.T.A. 1 : 121.

ABYSSINIA : Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,190 m., limestone slopes, in undergrowth, 2 m. high, Mar., No. 5448.—Endemic.

TAMARICACEAE.

Tamarix nilotica Ehrenb. in Linnaea 2 : 269 (1827).

SOMALILAND : near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., up to 980 m., sandy banks of stream, shrub 5 m., flowers white, Oct., No. 4302. Vernac.—*Dor.*

PASSIFLORACEAE.

Adenia aculeata (Oliv.) Engl. Bot. Jahrb. 14 : 375 (1892).

SOMALILAND : Buramo, long. 43° 12′ E., lat. 10° 1′ N., 1,170 m., climber, 29 Jan., No. 4888. Vernac.—*Lamagoia.*—Endemic.

A. venenata Forssk. Fl. Aegypt.-Arab. 77 (1775).

SOMALILAND : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., large swollen stem, fruit green and red, Oct., No. 4193. Duwi Pass, long. 44° 15′ E., lat. 10° 5′ N., 1,050 m., among rocks, flowers cream and red, Oct., No. 4370. Weranwis valley, long. 43° 50′ E., lat. 10° 15′ N., 480 m., open scrub, stem succulent, Nov., No. 4528. Vernac.—*Adahi medu.*

Adenia vitifolia Hutch. et E. A. Bruce, sp. nov., affinis *A. Ellenbeckii* Harms, sed foliis crispato-pubescentibus marginibus loborum vix dentatis neque punctatis differt.

Herba basi lignosa 0·3 m. alta, erecta vel scandens ; caules molliter pubescentes, costati. *Folia* digitatim partita, crispato-pubescentia, segmentis oblanceolatis marginibus undulatis usque ad 4 cm. longis nervis lateralibus infra prominentibus ; petioli 2–3 cm. longi, apice biglandulosi, pubescentes. *Cirrhi* simplices, subrecti, glabri, 3·5 cm. longi. *Flores* ♂ pauci, axillares, cremei; pedicelli 5 mm. longi, apice articulati ; calycis tubus longe cylindricus, 2 cm. longus, crebre et minute purpureo-maculatus ; lobi 5, oblongi, apice rotundati, 5 mm. longi, intra lanati ; petala spatulato-oblonga, 3 mm. longa ; antherae 6 mm. longae, mucronatae ; ovarii rudimentum subulatum. *Flores* ♀ non visi. *Fructus* late ellipsoideus, circiter 5 cm. longus, glaber. *Semina* compressa, ellipsoidea, 8 mm. longa, verrucosa.

SOMALILAND : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N. 990 m., 0·3 m. high, erect or climbing, slighty poisonous, flowers, cream, 6 Oct., No. 4202 (type in Kew Herb.). Vernac.—*Dalan Ka Wareri.*

CUCURBITACEAE.

Melothria tomentosa Cogn. in DC. Monogr. Phan. 3 : 614 (1881).

ABYSSINIA : Fuyan Hunjuba, long. 42° 17′ E., lat. 9° 26′ N., 1,920 m., on granite, flowers cream, Feb., No. 5101.

Momordica dissecta Baker in Kew Bull. 1895 : 215.

SOMALILAND : Dobo Pass, long. 43° 15′ E., lat. 10° 16′ N., 960 m., on gneiss alluvium, flowers yellow, Feb., No. 4977. Vernac.—*Dombaiyod.*—Endemic.

M. Schimperiana Naud. in Ann. Sci. Nat. Ser. 5, 5 : 23 (1866).

ABYSSINIA : Kondudo Mt., long. 42° 18′ E., lat. 9° 27′ N., 2,100 m., on limestone, flowers white, ripe fruit yellow, Feb., No. 5106. Vernac.—*Sara.*

Cucumis dipsaceus Ehrenb.—F.T.A. 2: 543; F.W.T.A. 1: 182.
SOMALILAND: Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., flowers yellow, Sept., No. 3942. Vernac.—*Gombol.*

C. ficifolius A. Rich.—F.W.T.A. 1: 182.
SOMALILAND: Boundary, long. 44° 10′ E., lat. 8° 37′ N., 1,290 m., flowers yellow, Oct., No. 4134.

Var. *echinophorus* Naud. in Ann. Sci. Nat. ser. 4, 11: 16 (1859).
SOMALILAND: Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., flowers yellow, Sept., No. 3967.

C. prophetarum Linn.—F.T.A. 2: 545; F.W.T.A. 1: 182.
SOMALILAND: Debrawen, long. 42° 49′ E., lat. 10° 26′ N., 1,930 m., on stony plain, flowers yellow, Nov., No. 4651.

Citrullus vulgaris Schrad.—F.T.A. 2: 549; F.W.T.A. 1: 183.
SOMALILAND: Berbera, Mar., No. 4759. Vernac.—*Unun.* The Water Melon.

Coccinia cordifolia Cogn.—F.W.T.A. 1: 184, fig. 81.
SOMALILAND: Dobo Pass, long. 43° 15′ E., lat. 10° 16′ N., 960 m., on green alluvium, climber, flowers yellow with greenish veins, Feb., No. 4976. Vernac.—*Ka ha ro ho.*

C. palmatisecta Kotschy in Sitzb. Akad. Wien. Math.-Nat. 51: 360, t. 4 (1865).
SOMALILAND: Auboba, long. 43° E., lat. 10° 6′ N., 1,740 m., on alluvial soil, prostrate, flowers yellow, green veined, Nov., No. 4622. Vernac.—*Bar Gudun.*—Also in Eastern Sudan.

Coccinia quercifolia Hutch. et E. A. Bruce, sp. nov. affinis *C. cordifoliae* (Cogn.) Cogn., sed foliis pinnatipartitis lobulis apice rotundatis et mucronatis differt.

Caulis gracilis, e basi lignosa flavida orti, glabri, internodiis circiter 3 cm. longis. Cirrhi simplices, graciles, circiter 4 cm. longi. *Folia* petiolis subamplexicaulibus, pinnatipartita, usque ad 6 cm. longa, lobis lateralibus utrinque circiter 3 lobatis mucronatis, basalibus longioribus 3 cm. longis, glauco-viridia, dermum laxe verrucoso-punctata. *Flores* ♂ axillares 1–3, flavi, pedicelli graciles, usque ad 1·5 cm. longi; hypanthium late turbinatum, striatum, 6 mm. longum; calycis dentes minimi, subulati; corolla extra pubescens, tubo 6 mm. longo campanulato, lobis ovatis acutis nervosis circiter 9 mm. longis; antherae 1·5 mm. longae; filamenta 3 mm. longa, basi corollae inserta. *Flores* ♀ solitarii; pedicelli crassi, 8 mm. longi; hypanthium 2 cm. longum, cylindricum; corolla breviter infundibuliformis, nervosa, lobis late ovatis circiter 7 mm. longis.
SOMALILAND: Boundary Pillar 93, long. 45° 3′ E., lat. 8° 37′ N., 900 m., leaves bluish, flowers yellow, 6 Oct., No. 4194 (type in Kew Herb.). Harradigit, Apr. *James and Thrupp.*

Raphanocarpus Stefaninii Chiov. Fl. Somala 1: 179, t. XX, fig. 2A (1929).
SOMALILAND: Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., flowers yellow, large woody rootstock, Oct., No. 4199. Vernac.—*Gurungut.*—Endemic.

Ochnaceae.

Ochna inermis (Forssk.) Schweinf. in Engl. Bot. Jahrb. 33 : 247 (1903).

Somaliland : near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., 930 m., lava slopes among Acacias, shrub 2 m., fr. perianth orange, Oct., No. 4305. Jifa Uri, long. 43° 22′ E., lat. 9° 42′ N., on gneiss kopje, in evergreen scrub, shrub 2 m., Jan., No. 4833.

Abyssinia : Gobelli, long. 41° 59′ E., lat. 9° 10′ N., 1,530 m., on granite, bush 2 m., Mar., No. 5264. Vernac.—*Ololgi* (Somali.) ; *Ergatanenja* (Abyss.).—Also in Eritrea and Arabia.

Myrtaceae.

Syzygium guineense DC.—F.W.T.A. 1 : 201.

Abyssinia : Gapa valley, long. 42° 13′ E., lat. 9° 21′ N., 1,500 m., on granite rocks by stream, tree 5 m. high, Feb., No. 5241.

Combretaceae.

Combretum aculeatum Vent.—F.T.A. 2 : 423 ; F.W.T.A. 1 : 220.

Somaliland : Weranwis valley, long. 43° 50′ E., lat. 10° 15′ N., 480 m., shrub 3 m., calyx red, corolla cream, Nov., No. 4530. Elmis, long. 44° 14′ E., lat. 10° 20′ N., 230 m., climber on sandy plain, Oct., No. 4496. Vernac.—*Iswud, Shuna shuna.*

C. collinum Fres.—F.T.A. 2 : 427 ; F.W.T.A. 1 : 220.

Abyssinia : Gafra valley, long. 42° 13′ E., lat. 9° 21′ N., 1,500 m., on granite in open woodland, tree 4 m., flowers cream, Feb., No. 5246.

C. ferrugineum A. Rich. Fl. Abyss. 1 : 267 (1847).

Somaliland : Auboba, long. 43° E., lat. 10° 6′ N., 1,650–1,800 m., on limestone slopes, tree 7 m., Nov., No. 4623. Vernac.—*Obol.*—Also in Abyssinia.

C. molle R. Br. ex. G. Don in Trans. Linn. Soc. 15 : 431 (1827). C. trichanthum *Fres.*—F.T.A. 2 : 431.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., on rocky limestone, flowers greenish cream, Sept., No. 4051. Biyu Suldan, long. 43° E., lat. 10° 20′ N., 1,200 m., tree 8 m., Dec., No. 4702. Vernac.—*Obol.*

Terminalia Brownei Fres.—F.T.A. 2 : 415 ; F.W.T.A. 1 : 224.

Somaliland : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 900–1,050 m., in tree-Acacia grass community, tree 5 m., Oct., No. 4424.

Abyssinia : Gafra valley, long. 42° 13′ E., lat. 9° 21′ N., 1,530 m., in upper deciduous scrub, tree 10 m., Feb., No. 5072. Vernac.—*Wob* (Somali.) ; *Alulo* (Abyss.).

T. orbicularis Engl. & Diels in Engl. Monogr. Afr. Pfl.-Fam. 4 : 26, t. xv a (1899).

Somaliland : near Bohotle, long. 46° 20′ E., lat. 8° 15′ N. in *Commiphora* bush-*Acacia* formation, small tree, fruits bright pink, Dec., No. 4718. Vernac.—*Bisaq.*—Also in Tanganyika.

T. spinosa Engl. Pflanzenw. Ost. Afr. C : 294 (1895).

Somaliland : near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., 990 m., edge of lava plateau, tree 5 m., fruit reddish, Oct., No. 4321. Ali Wein Mt., long. 45° 15′ E., lat. 10° 24′ N., 540 m., in limestone ravine, tree 4 m., Jan., No. 4828. Vernac.—*Hareri.*

Rhizophoraceae.

Cassipourea abyssinica Alston in Kew Bull. 1925 : 253.

Abyssinia : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,400 m., in low forest on limestone slope, 4 m., flowers green, Feb., No. 5148.—Also in Eritrea and Somaliland.

Hypericaceae.

Hypericum lanceolatum Lam.—F.T.A. 1 : 156 ; F.W.T.A. 1 : 230, fig. 99.

Abyssinia : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,400 m., rank herbage up to *Podocarpus* forest, 3 m., flowers yellow, Feb., No. 5142. Vernac.—*Mito.*

H. peplidifolium A. Rich.—F.T.A. 1 : 155.

Abyssinia : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,250 m., near irrigation in *Podocarpus* forest, prostrate, flowers yellow, Feb., No. 5116. Kondudo Mt., long. 42° 20′ E., lat. 9° 27′ N., 2,790 m., marshy hollows on limestone, Feb., No. 5218.

H. Quartinianum A. Rich.—F.T.A. 1 : 156.

Abyssinia : Kondudo Mt., long. 42° 18′ E., lat. 9° 27′ N., 2,100 m., in Juniper forest, 2 m., yellow, Feb., No. 5105. Vernac.—*Riga ganze.*

Tiliaceae.

Corchorus cinerascens Deflers in Bull. Soc. Bot. Fr. 42 : 300 (1895).

Somaliland : Afard, long. 44° 8′ E., lat. 10° 10′ N., 510 m., on sand, small shrub, 0·5 m., fls. yellow, Oct., No. 4439. Dubriat Mt., long. 45° 10′ E., lat. 10° 22′ N., 150 m., on shingly plain, 30 cm., Jan., No. 4779. Vernac.—*Adar.*—Also in Arabia.

C. depressus (Linn.) Stocks in Proc. Linn. Soc. 1 : 367 (1848). C. Antichorus *Raeusch.*—F.T.A. 1 : 263 ; F.W.T.A. 1 : 241.

Somaliland : Dubriat Mt., long. 45° 10′ E., lat. 10° 22′ N., 150 m., on open sand, prostrate, flowers yellow, Jan., No. 4777.

C. trilocularis Linn.—F.T.A. 1 : 262 ; F.W.T.A. 1 : 241.

Somaliland : Afard, long. 44° 8′ E., lat. 10° 10′ N., 570 m., in open scrub, fls. yellow, Oct., No. 4450. Las Dawan, long. 45° 12′ E., lat. 10° 20′ N., 180 m., Jan., No. 4811.

Grewia canescens A. Rich. Tent. Fl. Abyss. 1 : 86 (1847).

Somaliland : Hargeisa, long. 44° E., lat. 9° 35′ N., 1,350 m., 3 m., fls. yellow, Oct., No. 4249. Near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., 960 m., on lava slopes, shrub 2 m., berries edible, Oct., No. 4320.

Abyssinia : south west of Harar, long. 42° 6′ E., lat. 9° 17′ N., 1,800 m., lower evergreen formation, shrub 3 m., Jan., No. 5253. Vernac.—*Aroresa* (Abyss.) ; *Debbih medu* (Somal.).

G. erythraea Schweinf. in Verh. Zool.-Bot. Ges. Wien 18 : 671 (1868).

SOMALILAND : boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,260 m., woody plant, fls. white, Sept., No. 4087 ; 4136 ; boundary pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., fls. white, Oct., No. 4175 ; 4176 ; 4177. Vernac.—*Medo Ainyo ; Tukal Lalmis ; Karfade.*

G. fallax K. Schum. in Engl. Bot. Jahrb. 15 : 116 (1893).

SOMALILAND : Kabal gabat Pass, long. 43° E., lat. 10° 20′ N., 1,110 m., gneiss rocks in open wood, 3 m., fls. yellow, Dec., No. 4680. Buramo-Warieto, long. 43° 10′ E., lat. 10° 2′ N., up to 1,260 m., near stream beds, shrub 4 m., fls. yellow, Feb., No. 4917. Vernac.—*Debi fita widir.*

G. ferruginea Hochst. ex A. Rich.—F.T.A. 1 : 251.

ABYSSINIA : Ridge S.W. of Harar, long. 42° 6′ E., lat. 9° 17′ N., 1,890 m., on granite in lower evergreen formation, shrub 3 m., fls. white, Mar., No. 5251. Vernac.—*Bururi.*—Also in Eritrea.

G. mollis Juss.—F.T.A. 1 : 248 ; F.W.T.A. 1 : 244.

SOMALILAND : Hargeisa, long. 42° 1′ E., lat. 9° 33′ N., 1,290 m., among *Aloe* in tree-Acacia formation, bush 1 m., fls. yellow, 21 Sept., No. 3940. Vernac.—*Debi ad.*

The wood is white and is used for spears, walking sticks, and props for milk vessels.

G. Schweinfurthii Burret in Engl. Bot. Jahrb. 45 : 173 (1910).

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 34′ N., 1,290 m., on stony sandstone slopes, shrub 1·5 m., fls. yellow, Sept., No. 3998. Vernac.—*Debbih medu.*—Also in Arabia.

G. tembensis Fresen. Mus. Senckenb. 2 : 158 (1837).

SOMALILAND : Duwi Pass, long. 44° 15′ E., lat. 10° 5′ N., 1,200 m., in *Buxus-Acokanthera* scrub, shrub 4 m., fls. pale purple and white, Oct., No. 4375. Rarele Mt., nr. Buramo, long. 43° 15′ E., lat. 10° N., 1,800 m., on gneiss slope, shrub 2 m., fls. white, Dec., No. 4726.

ABYSSINIA : Gobelli, long. 41° 59′ E., lat. 9° 10′ N., 1,590 m., on granite, shrub 2 m., Mar., No. 5300. Vernac.—*Ture* (Somali).

G. tenax (Forssk.) Fiori in Agricoltura Coloniale 5 : Suppl. 23, fig. 114B (1911). G. populifolia *Vahl*—F.T.A. 1 : 246 ; Burret in Engl. Bot. Jahrb. 45 : 192.

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., fls. white, 1 m., Sept., No. 4044. Vernac.—*Duferu.*

Fls. and frt. eaten, ripe fruit called *Arsun*, fls. *Obah*, roots are used to make a poultice.

G. villosa Willd.—F.T.A. 1: 249, F.W.T.A. 1 : 244, fig. 107.

SOMALILAND : Hargeisa, long. 44° 3′ E., lat. 9° 33′ N., 1,260 m., shrub 2 m., Sept., No. 4200. Boundary Pillar 93, No. 4215A. Vernac.—*Gomesha.*

A good feed for stock ; fruit eaten by Somalis.

Sparrmania ricinocarpa (Eckl. & Zeyh.) O. Ktze. Rev. Gen. 3, 2 : 26 (1893).

ABYSSINIA : Kondudo Mt., long. 42° 20′ E., lat. 9° 27′ N., 2,520 m., on limestone slopes, 2 m., fls. pink, Feb., No. 5209.

Triumfetta actinocarpa S. Moore in Journ. Bot. 15 : 66 (1877).

Somaliland : Daradoanleh tug, long. 44° 16′ E., lat. 10° N., 1,080 m., in denuded tree-Acacia grass community, small shrub 0·2 m., fls. yellow, Oct., No. 4355.—Endemic.

T. flavescens Hochst. ex A. Rich.—F.T.A. 1 : 255.

Somaliland : about long. 44° 15′ E., lat. 10° 5′ N., 1,050–1,200 m., No. 4397A. Barataga, long. 44° 1′ E., lat. 10° 5′ N., 990 m., in tree-Acacia community, 1 m., fls. yellow, Oct., No. 4524. Vernac.—*Salo weni*.

T. heterocarpa var. *glabrior* Sprague & Hutch. in Journ. Linn. Soc. Bot. 39 : 265 (1909).

Somaliland : Buramo, long. 43° 10′ E., lat. 10° N., 1,500 m., in Acacia open wood, small shrub, 30 cm., fls. yellow, Jan., No. 4859. Vernac.—*Salo weni*.—Endemic.

T. trigona Sprague & Hutch. in Journ. Linn. Soc. Bot. 39 : 263 (1909).

Somaliland : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,050–1,200 m., on fringes of *Buxus* scrub, small shrub 1 m., fls. yellow, Oct., No. 4397. *Jebel Wotni* Mt., long. 45° 6′ E., lat. 10° 18′ N., on limestone, in open scrub, 0·5 m., fls. yellow, Jan., No. 4797. Vernac—*Salo weni*.—Endemic.

Sterculiaceae.

Dombeya Bruceana A. Rich.—F.T.A. 1 : 229 ; K. Schum. in Engl. Pflanzenfam. Sterculiáceae, 22.

Abyssinia : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,550–2,820 m., evergreen forest, limestone slopes, tree to 10 m., with white flowers, Mar., No. 5309.

Melhania Kelleri Schinz in Bull. Herb. Bois. Ser. II : 1008 (1902).

Somaliland : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., on heavily grazed ground, flowers pale yellow, Oct., No. 4209.—Endemic.

M. Denhamii R.Br.—F.T.A. 1 : 234 ; F.W.T.A. 1 : 248 ; Chiov. Fl. Somal. 103 ; Engl. Monogr. Pflanzenfam. Sterculiaceae, 15.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., on dry alluvium, flowers yellow, Sept., No. 4003.

Dobo Pass, long. 43° 15′ E., lat. 10° 15′ N., 1,140 m., in open wood on gneiss hills, involucral bracts reddish, Feb., No. 4974.

M. Phillipsiae Bak. f. in Journ. Bot. 1898 : 4.

Somaliland : Buramo, Warieto tug, long. 43° 10′ E., 1,080 m., lat. 10° 2′ N., on gneiss hills and in Acacia open wood, flowers yellow, Jan., No. 4908.—Endemic.

M. muricata Balf. f. in Proc. Roy. Soc. Edinb. 11 : 503 (1882).

Somaliland : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., fls. pale yellow, Oct., No. 4213. Vernac.—*Burbur* (crumbs).—Also in Socotra.

M. rotundata Hochst.—F.T.A. 1 : 230 ; K. Schum. in Engl. l.c. 4.

Somaliland : Mt. Wobleh, long. 43° 17′ E., lat. 10° 15′ N., 990 m., gneiss slopes and Acacia open wood, ½ m. high with yellow flowers, Feb., No. 4992.—Also in Abyssinia.

Hermannia boranensis K. Schum. in Engl. Bot. Jahrb. 33 : 311 (1903).

Somaliland : Afard, long. 44° 8′ E., lat. 10° 10′ N., 600 m., on schist slopes in open scrub, small shrub 1 m., fls. yellow, Oct., No. 4447. Vernac.—*Salo weni*.—Endemic.

Waltheria indica Linn. W. americana *Linn.*—F.T.A. 1 : 235 ; F.W.T.A. 1 : 250 ; K. Schum. in Engl. l.c. 45 ; Chiov. Fl. Somal. 105.

Somaliland : Barataga, long. 44° 1′ E., lat. 10° 5′ N., 480 m., flowers yellow, Oct., No. 4527.

Abyssinia : Gafra Valley, long. 42° 13′ E., lat. 9° 21′ N., 1,500 m., in deciduous scrub formation on granite slopes, Feb., No. 5067.

Sterculia arabica (R.Br.) T. Anders. ex Blatter Fl. Aden, 127 (1915).

Aden : 150–450 m., in sub-desert on lava crags, small tree 4 m., stem with purple blotches, fls. yellow, 21 March, No. 5476.—Also in Socotra.

S. Rivae Chiov. Fl. Somal. 103 (1929). S. Triplaca var. Rivaei *K. Schum.* in Engl. l.c. 106.

Somaliland : Buramo, Warieto tug, long. 43° 10′ E., lat. 10° 2′ N., 1,050–1,200 m., in Acacia open woodland and on steep gneiss slopes, tree 6 or 7 m., bark white with purple blotches, perianth crimson at base and green at apex in bud, later yellowish-green, young fruit crimson, Jan., No. 4900 ; Hargeisa, long. 44° E., lat. 9° 35′ N., 1,380 m., on sandstone rocks, wood soft, bark papery, fruit eaten by Somalis, Jan., No. 4260. Vernac.—*Garaho*.

Malvaceae.

Abutilon angulatum Mast.—F.T.A. 1 : 183 ; F.W.T.A. 1 : 261.

Abyssinia : Yuka, long. 41° 40′ E., lat. 9° 27′ N., 1,980 m., on limestone in cleared Juniper forest, shrub 1·5 m. high, fls. white with purple centre, Mar., No. 5460.

A. bidentatum Hochst.—F.T.A. 1 : 186.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., level ground in Tree Acacia formation, woody herb ½ m. high, flowers yellow, Sept., No. 3923. Boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,290 m., Oct., No. 4131. Buramo, long. 43° 10′ E., lat. 10° 2′ N., 1,200 m., Feb., No. 4916. Dobo Pass, long. 43° 15′ E., lat. 10° 16′ N., 960 m., on alluvial gneiss in Acacia open wood, flowers golden yellow, Feb., No. 4975. Vernac.—*Balumbal*.

A. fruticosum Guill. & Perr.—F.T.A. 1 : 187 ; F.W.T.A. 1 : 261.

Somaliland : Boundary at long. 44° 10′ E., lat. 8° 57′ N., 1,260 m., moist places, fls. yellow, 29 Sept., No. 4089. Duwi, long. 44° 15′ E., lat. 10° 5′ N., 840–990 m., Oct., No. 4387. Near Buramo, long. 43° 10′ E., lat. 10° N., 1,500 m., Nov., No. 4602 ; No. 4907. Vernac.—*Wana-ad*.

A. molle Baker in Kew Bull. 1895 : 212.

Somaliland : Boundary Pillar, long. 45° 9′ E., lat. 8° 37′ N., 990 m., in shade of bush, ½ m. high, flowers yellow with a crimson eye, Oct., No. 4161.—Vernac.—*Balumbal.*—Endemic.

A. ramosum Guill. and Perr.—F.T.A. 1 : 186 ; F.W.T.A. 1 : 261.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., level ground in tree Acacia formation, 1 m. high, flowers yellow, Sept., No. 3922.—Vernac.—*Balumbal.*

Sida ovata Forssk. Fl. Arab. 124, No. 84 (1775). Sida grewioides *Guill. and Perr.*—F.T.A. 1 : 182. F.W.T.A. 1 : 263.

Somaliland : Boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,260 m., in *Acacia Bussei* association, flowers yellow, Sept., No. 4090.

S. rhombifolia Linn.—F.T.A. 1 : 181 ; F.W.T.A. 1 : 263.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., on level ground in tree Acacia formation, flowers yellow, Sept., No. 3925.

S. Schimperiana Hochst.—F.T.A. 1 : 180.

Abyssinia : Harar, long. 42° 6′ E., lat. 9° 18′ N., 1,920 m., limestone to open grass in evergreen scrub formation, flowers yellow, 17 Feb., No. 5024.

S. triloba Cav.—F.T.A. 1 : 179.

Abyssinia : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,400 m., on close-grazed grass beneath trees, flowers and fruit white, Feb., No. 5163.

Pavonia arabica Hochst.—F.T.A. 1 : 193.

Somaliland : near Aleyalale, long. 44° 16′ E., lat. 10° N., 1,080 m., among stones on lava plateau, dwarf, fls. pink, Oct., No. 4357. Buramo, Warieto, long. 43° 10′ E., lat. 10° 2′ N., 1,080 m., on gneiss hills, Jan., No. 4909.

P. Burchellii (DC.) R. A. Dyer in Kew Bull. 1932 : 152.

Somaliland : Debrawen, long. 43° 10′ E., lat. 10° 5′ N., 990 m., on limestone alluvium in Acacia thicket, shrub 0·5 m., fls. yellow, Feb., No. 4941. Boundary, long. 44° 10′ E., lat. 8° 57′ N., Feb., No. 4112. Vernac.—*Balumbal, Salo-weni.*

Abyssinia : Haramaia, long. 42° E., lat. 9° 24′ N., 1,980 m., in hedges, fls. yellow, Mar., No. 5472.

P. Hildebrandtii Gürke in Engl. Bot. Jahrb. 48 : 371 (1912).

Somaliland : Buramo, long. 43° 10′ E., lat. 10° N., 1,500 m., on gneiss slopes, in open Acacia wood, fls. cream, turning pink, Jan., No. 4861.—Endemic.

P. Kotschyi Hochst.—F.T.A. 1 : 192 ; F.W.T.A. 1 : 264.

Somaliland : Dobo Pass, long. 43° 15′ E., lat. 10° 15′ N., 1,140 m., open wood on gneiss slopes, fls. lemon yellow, Feb., No. 4973.

P. Schimperiana Hochst. var. *tomentosa* Ulbr. in Engl. Bot. Jahrb. 57 : 109 (1920).

Abyssinia : Harar, long. 42° 10′ E., lat. 9° 20′ N., 1,740 m., near stream in grass among evergreen scrub, fls. pink, Feb., No. 5034. Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,310 m., on limestone near stream in open Podocarpus forest, 2 m. high, Mar., No. 5443. Vernac.—*Ablalati.*

P. Sennii Chiov. Fl. Somala 2 : 23, fig. 8 (1932).

Somaliland : Elmis, long. 44° 14′ E., lat. 10° 20′ N., 230 m., on sandy plains in desert-grass formation, suffruticose with white flowers, Oct., No. 4487.—Endemic.

P. zeylanica (L.) Cav.—F.T.A. 1 : 192 ; F.W.T.A. 1 : 263.

Somaliland : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., fls. pale yellow, Oct., No. 4186. Buramo, Dumuk tug, long. 43° 12′ E., lat. 10° 1′ N., 1,200 m., on sandy bank, viscid, Jan., No. 4893.

Cienfuegosia Ellenbeckii Gürke in Engl. Bot. Jahrb. 33 : 381 (1903).

Somaliland : Biji, long. 44° 5′ E., lat. 10° 12′ N., 540 m., at top of schist mountain in open Commiphora scrub, a slender shrub to 1 m., flowers yellowish red, Oct., No. 4507.

C. Welshii (T. Ands.) Garcke in Eichl. Jahrb. Bot. Gart. Berl. 2 : 337 (1883).

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., on sandy ground by dry stream bed, flowers yellow, aromatic, Oct., No. 4239 ; 1,350 m., flat spot on hills north of Hargeisa, Sept., No. 4030.—Also in Arabia.

Hibiscus asper Hk. f. Niger Fl. 228 ; F.W.T.A. 1 : 268.

Somaliland : Jihu hills, long. 43° 15′ E., lat. 10° N., 1,200 m., small shrub, 2 m. high, flowers yellow, Nov., No. 4601. Vernac.—*Edi libah.*

H. calycinus Willd.—F.T.A. 1 : 202.

Somaliland : Hargeisa, long. 44° 3′ E., lat. 9° 33′ N., 1,260 m., in shade of Acacias near the river, flowers yellow with dark crimson centre, Sept., No. 4069. Vernac.—*Salo weni.*

H. crassinervius Hochst.—F.T.A. 1 : 205.

Abyssinia : Yuka, long. 41° 40′ E., lat. 9° 27′ N., 1,980 m., on limestone slopes in open evergreen scrub, small shrub 2 m. high, flowers scarlet, Mar., No. 5450.

H. Hildebrandtii Sprague & Hutch. in Kew Bull. 1907 : 46.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., level ground among aloes in Tree Acacia formation, 1 m. high, flowers scarlet, berries edible, Sept., No. 3936. Vernac.—*Mira-geljira.*

H. Ludwigii Eckl. & Zeyh.—F.T.A. 1 : 203.

Abyssinia : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,580 m., on limestone slopes in Juniper-Podocarpus forest, woody herb 3 m., flowers yellow with dark red mark at base of petal, Mar., No. 5340.

H. lunariifolius Willd.—F.T.A. 1 : 202 ; F.W.T.A. 1 : 268. Hibiscus dongolensis *Del.*

Somaliland : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,050 m., among rocks in tree-acacias-grass community, flowers yellow with dark crimson centre, Oct., No. 4366. Vernac.—*Mira gel jira.*

H. micranthus Linn.—F.T.A. 1 : 205.

Somaliland : Duwi, long. 44° 12′ E., lat. 10° 8′ N., 690 m., flowers pink, Oct., No. 4442. Vernac.—*Mira gel Jira.*

H. somalensis Franch. in Révoil Pays Çomalis 16 (1882).

Somaliland : Boundary, long. 44° 10′ E., lat. 8° 5′ N., 1,260 m., in moister places, flowers scarlet, Sept., No. 4086. Vernac.—*Mira gel jira.*

H. spartioides Chiov. Fl. Somala 99, tab. 3 : 2 (1929).

Somaliland : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., flowers scarlet, Oct., No. 4205. Vernac.—*Ged medu.*—Endemic.

H. vitifolius Linn.—F.T.A. 1 : 197.

Abyssinia : Haramaia, long. 42° E., lat. 9° 24′ N., 1,980 m., erect to 2 m., flowers lemon yellow, Mar., No. 5473.

Lavatera abyssinica Hutch. et E. A. Bruce, sp. nov. affinis *L. unguiculatae* Desf., sed floribus axillaribus fasciculatis, epicalyce profunde lobato differt.

Suffrutex ad 2 m. altus, ubique stellato-tomentellus ; internodia circiter 4 cm. longa. *Folia* ambitu pentagona, 5-lobata, circiter 4 cm. longa et lata, basi cordata, lobis anguste ovatis, irregulariter dentata, nervis infra prominentibus ; petioli 3–4 cm. longi ; stipulae oblique ovatae, 1 cm. longae, striato-nervosae. *Flores* rosei, carmineo-lineati, axillares, fasciculati vel rare subsolitarii ; pedicelli ad 2 cm. longi. *Epicalycis lobi* 3, ovati, subacuti, 5 mm. longi. *Calyx* late campanulatus, ad medium 5-lobatus, 1 cm. longus, lobis ovato-triangularibus acuminatis. *Petala* pallide rosea, purpureo-lineata, obovata, 2 cm. longa, 1 cm. lata, unguiculata, unguibus dense ciliatis. *Columna staminalis* 1 cm. longa, infra antheras leviter pubescens. *Styli* purpurascentes, 4 mm. exserti. *Carpella* fructu circiter 15, glabra.

Abyssinia : Slopes of Mt. Sarerta, long. 42° 19′ E., lat. 9° 20′ N., 2,400 m., rank herbage scrub to Podocarpus forest, plant 2 m. high, with pale pink flowers, 23 Feb., No. 5195 (type in Kew Herb.). Vernac.—*Liti ada* (Galla).

The first record of this genus for Tropical Africa.

Malva parviflora Linn.—F.T.A. 1 : 177.

Somaliland : Dobo Pass, long. 43° 15′ E., lat. 10° 15′ N., 1,200 m., on gneiss hills and in Acacia open wood, petals white below, pink in the upper part, Feb., No. 4970.

Malpighiaceae.

Caucanthus edulis Forssk. Fl. Aegypt.-Arab. 91, n. 78 (1775).

Somaliland : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., in Commiphora-Acacia open scrub, flowers white, shrub 1 m., Oct., No. 4150. Vernac.—*Marmarod.*—Also in Arabia.

Phyllanthus Hildebrandtii Pax.—F.T.A. 6, 1 : 707.

SOMALILAND : Dobo Pass, long. 43° 15′ E., lat. 10° 15′ N., 1,200 m., in open Acacia wood and crannies of gneiss rocks, flowers greenish-cream, Feb., No. 4957.—Endemic.

P. maderaspatensis Linn.—F.T.A. 6, 1 : 722 ; F.W.T.A. 1 : 291.

SOMALILAND : Hargeisa, 1,440 m., on top of rocky hill (limestone), flowers greenish, Sept., No. 4025.

P. meruensis Pax—F.T.A. 6, 1 : 704.

ABYSSINIA : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,700 m., in evergreen forest, stems red, March, No. 5300.

P. Niruri Linn.—F.T.A. 6, 1 : 731 ; F.W.T.A. 1 : 291.

SOMALILAND : Las Dawan, long. 45° 12′ E., lat. 10° 20′ N., 180 m., in sandy bed of small tug, flowers greenish, Jan., No. 4812.

P. pentandrus Schum. & Thonn.—F.T.A. 6, 1 : 710 ; F.W.T.A. 1 : 291.

SOMALILAND : Hargeisa, 1,440 m., on limestone escarpment, flowers greenish, Sept., No. 4060 ; Boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,290 m., Oct., No. 4118 ; Dubriat Mt., long. 45° 10′ E., lat. 10° 22′ N., 210 m., Jan., No. 4792 ; Buramo-Warieto tug, long. 43° 10′ E., lat. 10° 2′ N., 1,080 m., on gneiss hills in Acacia open wood, flowers reddish, Jan., No. 4912.

P. reticulatus Poir.—F.T.A. 6, 1 : 700 ; F.W.T.A. 1 : 290.

ABYSSINIA : Yuka, long. 41° 40′ E., lat. 9° 27′ N., 1,710 m., in evergreen scrub by stream bed, on limestone, climbing to 4 m., flowers cream and red, March, No. 5454.

Fluggea virosa Baill.—F.W.T.A. 1 : 291.

SOMALILAND : Duwai, long. 44° 15′ E., lat. 10° 5′ N., 1,200 m., in Buxus-Acokanthera scrub, shrub 2 m., flowers greenish, Oct., No. 4382.

ABYSSINIA : near Gobelli, long. 41° 59′ E., lat. 9° 10′ N., 1,680 m., on granite, March, No. 5257. Vernac.—*Elan-Damera* (Somali).

Croton confertus Baker in Kew Bull. 1895 : 186.

SOMALILAND : Ali Wein Mt., long. 45° 15′ E., lat. 10° 24′ N., 540 m., in stony torrent-bed of limestone ravine, shrub 1 m. high, aromatic, flowers greenish, Jan., No. 4829.—Also in Arabia.

Croton Cliffordii Hutch. et E. A. Bruce, sp. nov. affinis *C. somalensi* Vatke et Pax, sed foliis plerumque ellipticis neque basi subcordatis nec apice acuminatis petiolis gracilioribus differt.

Frutex communis 1 m. altus ; ramuli hornotini dense lepidoto-stellati. *Folia* elliptica vel subovato-elliptica, basi rotundata et glandulis sessilibus ornata, apice obtusa vel rotundata, 3–5·5 cm. longa, 1·5–3 cm. lata, integra, leviter discoloria, supra viridia et molliter stellato-tomentella, infra cinereo-stellato-tomentella praecipue in costa media brunneo-lepidota, nervis lateralibus inconspicuis utrinsecus circiter 4 ; petioli graciles, usque 3·5 cm. longi. Racemi bisexuales, terminales, perbreves, basi flore ♀ pedicellato solitario. *Flores masculi :* pedicelli 3 mm. longi ; sepala ovato-triangularia, 3·5 mm. longa, extra stellato-tomentosa ; petala sepalis leviter

longiora, anguste oblanceolata, pubescentia ; stamina 10. *Flores foeminei :* pedicelli crassi, 1·5 mm. longi ; sepala anguste ovato-triangularia, 3 mm. longa ; petala 0 ; ovarium globosum, stellato-tomentosum ; styli 4 mm. longi, bilobi, basin versus pubescentes.

SOMALILAND : Hargeisa, 1,290 m., common shrub 1 m. high among Acacias, flowers greenish, Sept., No. 4040 (type in Kew Herb). Vernac.—*Bahī-e.*

C. macrostachys Hochst.—F.T.A. 6, 1 : 772 ; F.W.T.A. 1 : 297.

ABYSSINIA : Mulkajibri, long. 42° 16′ E., lat. 9° 24′ N., 1,770 m., in hedges, tree 7 m. high, dioecious, Feb., No. 5088. Vernac.—*Bisana.*

Cluytia abyssinica Jaub. & Spach.—F.T.A. 6, 1 : 807.

ABYSSINIA : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,340 m., in rank herbage, 1 m. high, fls. greenish, Feb., No. 5139.

Jatropha Brockmannii Hutch.—F.T.A. 6, 1 : 787.

SOMALILAND : Wobleh, long. 43° 17′ E., lat. 10° 15′ N., 1,500 m., on bare mountain slopes with scattered tree acacias, plant reddish, flowers yellow, Nov., No. 4588. Vernac.—*Jilbadig, Gedan.*—Endemic.

J. glandulosa Vahl—F.T.A. 6, 1 : 793.

SOMALILAND : Berbera, sea level, in sub-desert and sand above coral rock island, 1 m. high, fls. and juice yellow, Jan., No. 4752. Vernac.—*Jilbadig.*—Also in Nubia, Eritrea and S. Arabia.

J. palmatifida Bak.—F.T.A. 6, 1 : 787.

SOMALILAND : Hargeisa, 1,350 m., flowers greenish-yellow, Oct., No. 4245. Vernac.—*Jilbadig, Gedan.*—Endemic.

J. Phillipseae Rendle—F.T.A. 6, 1 : 795.

SOMALILAND : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 840 m., among Commiphora, etc., scrub on stony slopes, small shrub 1 m. high, fls. greenish, Oct., No. 4391. Vernac.—*Jilbadig, Ged An.*—Endemic.

J. spinosa (Forssk.) Vahl ex Blatter Fl. Aden, 330 (1915).

ADEN : 150–450 m., on lava slopes, shrub 1·5 m. high, flowers yellow, Mar., No. 5479.

var. *somalensis* Pax—F.T.A. 6, 1 : 780.

SOMALILAND : Elmis, long. 44° 14′ E., lat. 10° 22′ N., 300–600 m., on mountain slopes in Commiphora, etc., open scrub, shrub 2 m. high, fls. yellow, Oct., No. 4497 ; Afard, long. 44° 8′ E., lat. 10° 10′ N., 540 m., Oct., No. 4457. Vernac.—*Jilbadig, Ged An.*

J. parvifolia Chiov. Nuov. Contrib. Somal. Ital. 18 (1934).

SOMALILAND : Dubriat Mt., long. 48° 10′ E., lat. 10° 22′ N., 300 m., on limestone slopes and in open scrub, fls. yellowish, Jan., No. 4795 ; Boundary Camp, 99, long. 44° 39′ E., lat. 8° 47′ N., 1,140 m., in deep soil, bush ½ m. high, very aromatic, Oct., No. 4138. Vernac.—*Jilbadig.*—Endemic.

Chrozophora oblongifolia (Del.) A. Juss.—F.T.A. 6, 1 : 836.

SOMALILAND : Biji, long. 44° 5′ E., lat. 10° 12′ N., 420 m., in sand by big tug, strong woody herb 1 m. high, fls. greenish, Oct., No. 4514. Vernac.—*Mara mudo weyi.*—Also in Eritrea, Arabia and Socotra, and in Scind (India).

Erythrococca abyssinica Pax—F.T.A. 6, 1 : 856.

ABYSSINIA : Harar, long. 42° 10′ E., lat. 9° 20′ N., 1,740 m., in hedges and evergreen scrub cultivation, 1 m. high, fls. greenish, Feb., No. 5046. Vernac.—*Ogomdil*—Also in Eritrea and Arabia.

Acalypha fruticosa Forssk.—F.T.A. 6, 1 : 895.

SOMALILAND : Hargeisa, 1,290 m., on alluvium in shade of Acacia-Ziziphus thicket, shrub 1 m. high, infl. green, Sept., No. 3961. Vernac.—*Dirrhi*.

A. indica Linn.—F.T.A. 6, 1 : 903.

SOMALILAND : Daraweina, long. 44° 10′ E., lat. 9° 43′ N., 1,110 m., in grass in shade of trees, Oct., No. 4288.

Ricinus communis Linn.—F.T.A. 6, 1 : 945 ; F.W.T.A. 1 : 306.

SOMALILAND : near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., 930 m., on river banks, shrub 3 m. high, Oct., No. 4306. Vernac.—*Bor*.

Tragia arabica Baill. var. *parvifolia* Prain—F.T.A. 6, 1 : 982.

SOMALILAND : Duwi Pass, long. 44° 15′ E., lat. 10° 5′ N., 1,200 m., in Buxus-Acokanthera scrub, a climbing, stinging herb, Oct., No. 4374. Vernac.—*Dubka*.

T. brevipes Pax—F.T.A. 6, 1 : 983.

SOMALILAND : Hargeisa, 1,290 m., on alluvium in Acacia-Euphorbia thickets, a climber with greenish fls. and stinging leaves, Mar., No. 3963. Vernac.—*Gob daheyo*.

Cephalocroton cordofanus Hochst.—F.T.A. 6, 1 : 844.

SOMALILAND : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., shrublet, fls. greenish-yellow, Oct., No. 4182. Vernac.—*Chimba*.

Euphorbia breviarticulata Pax—F.T.A. 6, 1 : 582. E. grandilobata *Chiov*.

SOMALILAND : Barataga, long. 44° 1′ E., lat. 10° 5′ N., 1,290 m., on mountain top with scattered Buxus, ½ m. high, flowers yellow, Oct., No. 4519. Vernac.—*Dibu*.

E. cuneata Vahl—F.T.A. 6, 1 : 545.

SOMALILAND : Afard, long. 44° 8′ E., lat. 10° 10′ N., 540 m., in Commiphora-bush-Acacia etc., open scrub on schist slopes, shrub with papery bark which peels off, flowers yellow, Oct., No. 4478. Aden, 210 m., on lava slopes, Mar., No. 5481. Vernac.—*Derender* (Somali).

E. gossypina Pax—F.T.A. 6, 1 : 553.

SOMALILAND : Jebel Wotni Mt., long. 45° 6′ E., lat. 10° 18′ N., 360 m., on limestone slopes, ½ m. high, Jan., No. 4804. *Vernac.—Én*.

E. grandis Lem.—F.T.A. 6, 1 : 590.

SOMALILAND : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,230 m., in Buxus scrub, occurs very sparingly on limestone, tree 8m ., flowers yellow, fruits coppery-red when ripe, Oct., No. 4414. Vernac.—*Hasadin*.

E. granulata Forssk.—F.T.A. 6, 1 : 502.

SOMALILAND : Dubriat Mt., long. 45° 10′ E., lat. 10° 22′ N., 150 m., on limestone screes in lower open scrub, prostrate herb, flowers brown minute, glands red, Jan., No. 4780.

E. infausta N.E. Br.—F.T.A. 6, 1 : 580.

Somaliland : Wobleh, long. 43° 17′ E., 10° 15′ N., 1,200 m., on south-facing Mt. slopes with Commiphora etc. open scrub, succulent 1 m. high, flowers yellow, Nov., No. 4584. Vernac.—*Dibu.*—Also in Eritrea.

E. inaequispina N.E. Br.—F.T.A. 6, 1 : 576.

Somaliland : Hargeisa, 1,410 m., 0·5 m. succulent, fls. yellow, Oct., No. 4256. Hargeisa, 1,410 m., on sandstone rocks, succulent ½ m. high, fls. yellow, Oct., No. 4256 ; Raréle Mt., long. 43° 15′ E., lat. 10° N., 1,800 m., Dec., No. 4729. Vernac.—*Dadan.*—Endemic.

E. longecornuta Pax—F.T.A. 6, 1 : 535.

Abyssinia : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,700 m., rank herbage to evergreen forest, stems red, Mar., No. 5298, No. 5339.

E. longetuberculosa Hochst.—F.T.A. 6, 1 : 558.

Somaliland : Afard, long. 44° 8′ E., lat. 10° 10′ N., 540 m., on schist slopes in Commiphora open scrub, fls. yellow and red, Oct., No. 4453. Vernac.—*Ged ambar.*

E. monacantha Pax—F.T.A. 6, 1 : 565.

Somaliland : Duwi Pass, long. 44° 15′ E., lat. 10° 5′ N., 1,080 m., in tree acacia grass and rocky places, fls. yellow, Oct., No. 4379. Vernac.—*Donedugh.*

E. nigrispina N.E. Br.—F.T.A. 6, 1 : 574.

Somaliland : near Duwi, long. 44° 12′ E., lat. 10° 8′ N., 660 m., level sandy ground with Acacia, shrub ½ m. high, fls. yellow, Oct., No. 4440 ; near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., 990 m., on lava rocks, 2 dm. high, fls. yellow, stem 4–5 angled, Oct., No. 4308. Vernac.—*Dibu.*—Endemic.

E. nubica N.E. Br.—F.T.A. 6, 1 : 554.

Somaliland : Hargeisa, 1,290 m., on level ground with aloes and acacias, 3 m. high, dominant, Sept., No. 3950. Vernac.—*Ergin.*

E. polyacantha Boiss.—F.T.A. 6, 1 : 578.

Abyssinia : Kofajalo, long. 41° 51′ E., lat. 9° 9′ N., 2,250 m., on limestone in Juniper-forest association, shrub 2 m. high, fls. yellow, fruit purplish-green, Mar., No. 5275.—Endemic.

E. polycremoides Hochst.—F.T.A. 6, 1 : 506.

Somaliland : Afard, long. 44° 8′ E., lat. 10° 10′ N., 690 m., on basalt rocks in Commiphora open scrub, Oct., No. 4451. Buramo-Warieto tug, long. 43° 10′ E., lat. 10° 2′ N., 1,080 m., stems reddish, Jan., No. 4910.

E. pseudoholstii Pax—F.T.A. 6, 1 : 521.

Somaliland : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., rather bare ground, Oct., No. 4221. Vernac.—*Ên.*—Endemic.

E. Robecchii Pax—F.T.A. 6, 1 : 583.

Somaliland : Burmado, long. 43° 50′ E., lat. 10° 13′ N., 810 m., on mt. slopes in upper Commiphora and open scrub, tree to 4 m. high, fls. yellow, Nov., No. 4538. Vernac.—*Darkain.*—Endemic.

E. rubella Pax—F.T.A. 6, 1 : 560.

Abyssinia : Harar, long. 42° 6′ E., lat. 9° 18′ N., 1,950 m., limestone mountains in evergreen forest formation, leafless, inflorescence pale pink, Feb., No. 5007.—Endemic.

E. scoparia N.E. Br.—F.T.A. 6, 1 : 557.

Somaliland : Barataga, long. 44° E., lat. 10° 5′ N., 1,290 m., Mt. top in scattered Buxus scrub and on limestone, 1 m. high, fls. yellow, Oct., No. 4521. Bir Dai, long. 44° 17′ E., lat. 9° 55′ N., 870 m., on dry alluvial soil in upper Commiphora etc. open scrub, shrub 8 m. high, fls. yellow, floral bracts white, conspicuous, Oct., No. 4342. Vernac.—*Mirhig yer, Mirhig.*

E. somalensis Pax—F.T.A. 6, 1 : 550.

Somaliland : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 840–960 m., on steep rocky slopes in Commiphora scrub, very common in heavily grazed parts, shrub 3 m. high, leaves grey, Oct., No. 4384. Vernac.—*Falla Falla.*—Endemic.

E. systyla Edgew.—F.T.A. 6, 1 : 519.

Aden : 150 m., on lava slopes, 40 cm. high, fls. dark red, Mar., No. 5483.—Also in Somaliland and Arabia.

E. Thi Schweinf.—F.T.A. 6, 1 : 581.

Somaliland : Afard, long. 44° 8′ E., lat. 10° 10′ N., 600 m., on slopes with Commiphora and in open scrub, shrub 2 m. high, fls. yellow, Oct., No. 4480. Vernac.—*Dibu.*

E. triaculeata Forssk.—F.T.A. 6, 1 : 564.

Somaliland : Hargeisa, a common succulent in stony places, fls. yellow, stem mottled, Oct., No. 4268 ; Afard, 510 m., Oct., No. 4482.

E. turbiniformis Chiov. Fl. Somala 304, tab. 35, fig. 1 (1929) (ex descr. et ic.).

Somaliland : Hargeisa, 1,350 m., on stony ground, limestone and sandstone, a succulent, top flush with ground, fls. yellow, sap smelling of coconut, Oct., No. 4241.—Endemic.

Rosaceae.

Alchemilla cryptantha Steud.—F.T.A. 2 : 377.

Abyssinia : Near Kofajalo, long. 46° 51′ E., lat. 9° 9′ N., 2,310 m., by stream in open place of Podocarpus forest association, prostrate herb, fls. greenish yellow, Mar., No. 5281.

A. kiwuensis Engl. in Wiss. Ergebn. Deutsch. Zentr.-Afr. Exped. 2 : 225 (1911).

Abyssinia : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 3,000 m., Mt. top, on limestone in open grass, stems red, fls. yellowish-green, Mar., No. 5316.

A. pedata Hochst.—F.T.A. 2 : 379.

Abyssinia : Kondudo Mt., long. 42° 20′ E., lat. 9° 27′ N., 2,760 m., on mt. top in marshy hollow, fls. greenish-yellow, Feb., No. 5220 ; Gorla-Kolubi track, long. 41° 45′ E., lat. 9° 22′ N., 2,610 m., leaves silvery, Mar., No. 5398.

Rubus apetalus Poir.—F.T.A. 2 : 374 ; F.W.T.A. 1 : 314. R. exsuccus *Steud.* ex A. Rich. Fl. Abyss. 1 : 256 (1847).

Abyssinia : Gara mulata mt., long. 41° 48′ E., lat. 9° 12′ N., 2,580 m., on limestone, in evergreen forest, scandent, corolla very variable in size, white or pale pink, filaments crimson, 4 Mar., No. 5354. Vernac.—*Unjori.*

R. Volkensii Engl. Bot. Jahrb. 19 : Beibl. 47 : 30 (1894). R. Chiesae *Chiov.* in Ann. di Bot. 9 : 319 (1911).

Abyssinia : Gorla :- long. 41° 48′ E., lat. 9° 12′ N., 2,580 m., on limestone in evergreen forest, erect 2 m. high, thorns red, fls. pale cream, Mar., No. 5296.

Hagenia abyssinica Willd.—F.T.A. 2 : 380 (as Brayera anthelmintica *Kunth.*).

Abyssinia : Sarerta Mt., long. 42° 19′ E., lat. 9° 30′ N., 2,400 m., on edge of evergreen forest, tree 6 m. high, 23 Feb., No. 5178. Vernac.—*Koso.*

Potentilla reptans Linn.—F.T.A. 2 : 376.

Abyssinia : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,250 m., on limestone by stream, prostrate herb, fls. yellow, Feb., No. 5169.

Rosa abyssinica R. Br.—F.T.A. 2 : 381.

Abyssinia : Harar, long. 42° 6′ E., lat. 9° 18′ N., 1,890 m., on limestone, climbing or suberect, corolla white, Feb., No. 5031. Vernac.—*Ga-aga.*—Also in Eritrea.

Pygeum africanum Hook. f.—F.T.A. 2 : 373 ; F.W.T.A. 1 : 314.

Abyssinia : Boesesa valley, long. 42° 18′ E., lat. 9° 29′ N., 2,010–2,400 m., in evergreen forest, codominant with Podocarpus, tree 30 m., fr. dark red, Feb., No. 5173. Vernac.—*Tugoringetz ; Mukoraja.*

Caesalpiniaceae.

Delonix elata Gamble—Bak. f. Leg. Trop. Afr. 624 (1926–30). Poinciana elata *Linn.*—F.T.A. 2 : 266.

Somaliland : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., tree to 5 m., Oct., No. 4195 ; Aden, 150 m., on lava, Mar., No. 5511. Vernac.—*Lebi* (Somali).

Tamarindus indica Linn.—F.T.A. 2 : 308 ; Bak. f. l.c. 702.

Somaliland : Daraweina tug, long. 44° 8′ E., lat. 9° 40′ N., 1,170 m., tree 10 m., fls. cream veined with crimson, Oct., No. 4281. Vernac.—*Hamar.*

Cassia acutifolia Del.—F.T.A. 2 : 278 ; Bak. f. l.c. 637.

Somaliland : Boūndary, long. 44° 15′ E., lat. 8° 58′ N., 1,260 m., on shallow soil in Acacia-grass veldt, suffruticose, fls. yellow, Sept., No. 4100 ; Dubriat mt., long. 5° 10′ E., lat. 10° 22′ N., 150 m., limestone slopes, 2 m. high, fls. yellow, Jan., No. 4778. Vernac.—*Jalelo gel.*

C. adenensis Benth.—Bak. f. l.c. 637.

Aden : 150 m., on lava, 1–1·5 m. high, fls. yellow, Mar., No. 5513.—Also in Somaliland.

C. Aschrek Forssk. Fl. Aegypt. Arab. 86 (1775): C. obovata *Collad.*—F.T.A. 2 : 277 ; Bak. f. l.c. 636.

Somaliland : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., on bare ground in open scrub, Oct., No. 4151 ; Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., on alluvium, fls. yellow, Sept., No. 4018. Vernac.—*Jalelo.*

Cassia holosericea Fresen.—F.T.A. 2 : 278 ; Bak. f. l.c. 636.

Somaliland : Berbera, sea level, sandy and shingly plain prostrate herb, fls. yellow, Jan., No. 4749. Vernac.—*Jalelo ari.*

C. mimosoides Linn.—F.T.A. 2 : 280 ; Bak. f. l.c. 642.

Abyssinia : Mulka jibri, long. 42° 16′ E., lat. 9° 24′ N., 1,650 m., in hedges, shrub 1 m. high, Feb., No. 5084.

Cadia purpurea Ait.—Bak. f. l.c. 603. C. varia *L'Hérit.*—F.T.A. 2 : 255.

Somaliland : Hargeisa, long. 44° E., lat. 9° 35′ N., 1,350 m., on sandstone rocks, shrub 3 m. high, 13 Oct., No. 4251. Vernac.—*Salalma.*

Abyssinia : Kolubi-Harar Road, long. 41° 40′ E., lat. 9° 27′ N., 1,740 m., on limestone slopes, 2–3 m. high, fls. cream or purple, Mar., No. 5459. Vernac.—*Saele.*

Pterolobium exosum (Gmel.) Bak. f.—Bak. f. l.c. 621.

Somaliland : Libah Mele mt., long. 43° E., lat. 10° 20′ N., 1,410 m., by spring in lower Buxus scrub, Dec., No. 4700.

Abyssinia : Harar, long. 42° 10′ E., lat. 9° 20′ N., 1,590 m., climber or suberect, Feb., No. 5043. Vernac.—*Kantafa, Libah Halalalis* (Somali).

Caesalpinia Gillettii Hutch. et E. A. Bruce, sp. nov. affinis *C. eriantherae* Chiov., sed foliolis minute pubescentibus, pedicellis annulo pilorum brevium instructis, antheris glabris differt.

Frutex usque ad 3 m. altus, aculeatus ; rami flexuosi, pubescentes. *Folia* bipinnata ; pinnae 2–4–jugatae, circiter 4 cm. longae ; foliola 6–8–jugata, oblongo-elliptica, apice mucronata, basi inaequaliter rotundata, 4–6 mm. longa, 2–3 mm. lata, uninervia, minute pubescentia. *Racemi* in ramulis abbreviatissimis terminales, pauciflori ; bracteae lanceolatae, 1·25 mm. longae, pubescentes ; pedicelli circiter 5 mm. longi, medio annulo pilorum brevium instructi. *Lobi calycis* lanceolati, acuti, 4 mm. longi, parce pubescentes. *Petala* inaequalia, uno late obovato 9 mm. longo et 4·5 mm. lato flavo, ceteris minoribus late lanceolatis pallidis. *Filamenta* leviter pubescentia. *Ovarium* breviter stipitatum, oblique oblongum, glabrum ; stylus 2 mm. longus. *Fructus* oblongo-lanceolatus, utrinque attenuatus, 8–10 cm. longus, 1·5–1·8 cm. latus, 3–4-spermus, longitudinaliter nervoso-reticulatus. *Semina* quadrato-orbicularia, 7 mm. diametro, maculata.

Somaliland : Marmar range, long. 42° 47′ E., lat. 10° 29′ N., 1,050 m., on limestone slopes, shrub 3 m. high, 27 Dec., No. 4660. Weranwis valley, long. 43° 50′ E., lat. 10° 15′ N., 510 m., bush 2 m., 1 Nov., No. 4531. Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., bush 2 m. high, fls. yellow, 5 Oct., No. 4157 (type in Kew Herb.). Vernac.—*Hria gorleh ; Lebi yer ; Lumba.*

Entada abyssinica Steud.—F.T.A. 2 : 327 ; Bak. f. l.c. 789.
ABYSSINIA : Gafra valley, long. 42° 13′ E., lat. 9° 21′ N., 1,500 m., on granite near stream, tree 8 m. high, fls. yellow, Feb., No. 5238. Vernac.—*Kantafa.*

Dichrostachys glomerata (Forssk.) Chiov.—Bak. f. l.c. 807.
SOMALILAND : Daraweina, long. 44° 10′ E., lat. 9° 4′ N., 1,110 m., on sand, tree 5 m. high, fls. yellow and pink, Oct., No. 4287. Vernac.—*God han torle.*

Acacia albida Del.—F.T.A. 2 : 339 ; Bak. f. l.c. 825.
SOMALILAND : Buramo, Mendesa tug, long. 43° 20′ E., lat. 9° 45′ N., 1,590 m., on limestone by stream-bed, tree 12 m. high, the most massive Acacia seen in Somaliland, fruits dark yellow, conspicuous, Jan., No. 4839. Vernac.—*Garabi.*

A. arabica Willd.—F.T.A. 2 : 350 ; Bak. f. l.c. 849.
SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., tree 5 m. high, fls. yellow, Sept., No. 3948, partly. Vernac.—*Marah.*

A. Asak Willd.—Bak. f. l.c. 826.
SOMALILAND : Duwi, lat. 10° 5′ N., 44° 15′ E., shrub 1–2 m., Oct., No. 4427. Vernac.—*Adad Medu.*

A. Bussei Harms—Bak. f. l.c. 825.
SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., dominant, 5 m., fls. cream, Sept., No. 3956. Vernac.—*Galol.*

A. Edgeworthii Anders. in Journ. Linn. Soc. 5 : Suppl. 18 (1860).
ADEN : 210 m., 0·5 m., fls. cream, Mar., No. 5507.—Endemic.

A. etbaica Schweinf.—F.T.A. 2 : 349 ; Bak. f. l.c. 840.
SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., tree 4 m., fls. cream, Sept., No. 3934. Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,050–1,200 m., dominant tree 3 m., Oct., No. 4398.
ABYSSINIA : Gobelli, long. 41° 59′ E., lat. 9° 10′ N., 1,710 m., on granite slope in evergreen scrub, tree 4 m., Mar., No. 5269. Vernacs.—*Yurar ; Yube ; Sugsug.*

A. glaucophylla Steud.—F.T.A. 2 : 342 ; Bak. f. l.c. 827.
SOMALILAND : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,020–1,170 m. ; on fringes of Buxus scrub, tree 6 m. with well-defined bole, Oct., No. 4396. Vernac.—*Réde.*

A. mellifera Benth.—F.T.A. 2 : 340 ; Bak. f. l.c. 828.
SOMALILAND : Boundary, long. 44° 15′ E., lat. 8° 55′ N., 1,260 m., Acacia-grass veldt, tree 4 m., fls. cream, Sept., No. 4083. Vernac.—*Bilel.*

A. misera Vatke in Oesterr. Bot. Zeit. 30 : 275 (1880).
SOMALILAND : Boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,290 m., tree 4 m. usually branching near the base, Oct., No. 4124. Dubar, long. 45° 5′ E., lat. 10° 20′ N., 300 m., mt. slopes on coralline limestone and sandstone, shrub 2 m., fls. pale yellow, Jan., No. 4769. Vernac.—*Khansa*—Endemic.

A. Nefasia (Hochst. ex A. Rich.) Schweinf. (A. abyssinica *Hochst.*—F.T.A. 2 : 347).

Abyssinia : Slopes of Sarerta Mt., long. 42° 19′ E., lat. 9° 30′ N., 2,400 m., shrub 3 m., Feb., No. 5187. Vernac.—*Gurar.*

A. nilotica Del.—F.T.A. 2 : 350 (sub A. arabica *Willd.*).

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 32′ N., 1,290 m., tree 5 m., fls. yellow, Sept., No. 3948, partly. Vernac.—*Marah.*

A. orfota Schweinf.—Bak. f. l.c. 839.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., on dry alluvium, tree 2 m., branching from base, fls. cream, Sept., No. 4024. Vernac.—*Gummur.*

A. pennata Willd.—F.T.A. 2 : 345 ; Bak. f., l.c. 853.

Abyssinia : Harar, long. 42° 10′ E., lat. 9° 20′ N., 1,680 m., in evergreen scrub formation, bush 2–3 m., Feb., No. 5047. Vernac.—*Kwanta.*

A. Senegal Willd.—Bak. f. l.c. 827.

Somaliland : Hargeisa, long. 44° 3′ E., lat. 9° 33′ N., 1,260 m., tree 5 m. high, fls. cream, Sept., No. 3954 ; 4066. Vernac.—*Adad.* Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., shrub 2 m., Oct., No. 4178. Vernac.—*Jalefon.*

Abyssinia : Gobelli, long. 41° 59′ E., lat. 9° 10′ N., 150 m., Mar., No. 5261.

A. Seyal Del.—F.T.A. 2 : 351 ; Bak. f. l.c. 844.

Somaliland : Afard, long. 44° 8′ E., lat. 10° 8′ N., 1,170 m., on plateau, in Acacia-grass veld, tree 5 m., stem white, Oct., No. 4465.

Abyssinia : ridge south of Hara, long. 42° 6′ E., lat., 9° 17′ N., 1,950 m., on granite in lower evergreen formation, tree 7 m., Mar., No. 5250. Vernac.—*Wadi* (Somali) ; *Wajo* (Abyssinian).

A. Sieberiana DC.—F.T.A. 2 : 347 ; Bak. f. l.c. 836.

Somaliland : Afard, long. 44° 8′ E., lat. 10° 10′ N., 510 m., on sandy soil dominant up to 900 m., found up to 1,500 m., low flat topped bushes ½–1 m. high, Oct., No. 4443. Vernac.—*Jerin.*

A. somalensis Vatke—Bak. f. l.c. 833.

Somaliland : Afard, long. 44° 8′ E., lat. 10° 10′ N., 540 m. on schist slopes, bush 2 m., fls. lemon, Oct., No. 4458. Vernac.—*Hini.*—Endemic.

A. spirocarpa Hochst.—Bak. f. l.c. 842.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 38′ N., 1,290 m., tree 8 m., dominant, Sept., No. 3910.

Abyssinia : Gobelli, long. 41° 59′ E., lat. 9° 10′ N., on granite, tree 4–5 m., Mar., No. 5260. Vernac.—*Gurha.*

Albizzia anthelmintica Brongn.—F.T.A. 2 : 357 ; Bak. f. l.c. 859.

Somaliland : Boundary, long, 44° 10′ E., lat. 8° 57′ N., 1,260 m., tree to 6 m. high, fls. white-reddish, Sept., No. 4095. Vernac.—*Rhideb.*

Calpurnia subdecandra (L'Herit.) Schweickerdt in Bothalia 3 : 237 (1937). C. aurea *Benth.*—Bak. f. Leg. Trop. Afr. 593.

ABYSSINIA : Harar, long. 42° 6′ E., lat. 9° 18′ N., 1,920 m., on limestone, 1 m., fls. yellow, Feb., No. 5008. Vernac.—*Degita.*

Dalbergia commiphoroides Bak. f. Leg. Trop. Afr. 521.

SOMALILAND : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., bush 3 m., fls. white, in open scrub, Oct., No. 4153. Vernac.—*Duya.*—Endemic.

Tephrosia atroviolacea Bak. f. ex De Willd.—Bak. f. l.c. 214.

ABYSSINIA : S.W. slopes of Kondudo Mt., long. 42° 18′ E., lat. 9° 27′ N., 2,100 m., on limestone slopes, shrub 3 m., Feb., No. 5104.

T. barbigera Welw. ex Bak.—F.T.A. 2 : 113 ; Bak. f. l.c. 196.

ABYSSINIA : Mulka jibri, long. 42° 16′ E., lat. 9° 24′ N., 1,620 m., shrub 2 m., in lower evergreen formation, Feb., No. 5103. Vernac.—*Kisa.*

T. obbiadensis Chiov. Fl. Somala 144, tab. 7, fig. 2 ; Bak. f. l.c. 882.

SOMALILAND : Afard, long. 44° 8′ E., lat. 10° 10′ N., 540 m., in open scrub on schist slopes, shrub 1 m., fls. crimson, Oct., No. 4469. Vernac.—*Ged hajin.*—Endemic.

T. purpurea Pers.—F.T.A. 2 : 124 ; Bak. f. l.c. 190.

SOMALILAND : Elmis, long. 44° 14′ E., lat. 10° 20′ N., 240 m., on sandy plain in desert-grass community, herb, fls. red, Oct., No. 4492. Near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., 960 m., Oct., No. 4319, partly.

Tephrosia Franchetii Hutch. et E. A. Bruce, nom. nov. T. simplicifolia *Franch.* (1882), non F. Muell. ex Benth. (1864).

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 35′ N., 1,350 m., on stony hills, fls. pink, Sept., No. 4033.

T. uniflora Pers.—Bak. f. l.c. 184.

SOMALILAND : near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., 960 m., on lava slope, fls. pink, Oct., No. 4319 partly.

T. vicioides A. Rich.—F.T.A. 2 : 117.

SOMALILAND : Camp 4, long. 44° 16′ E., lat. 10° N., 1,080 m., Oct., No. 4358 ; Elmis, long. 44° 14′ E., lat. 10° 20′ N., 240 m., on sandy plains, Oct., No. 4494. Vernac.—*Geldabar.*

Sesbania Sesban (L.) Merrill in Philipp. Journ. Sci. Bot. 7 : 235 (1912). S. aegyptiaca *Pers.*—F.T.A. 2 : 134 ; Bak. f. l.c. 259.

SOMALILAND : Biji, long. 44° 5′ E., lat. 10° 12′ N., 420 m., among Tamarix, shrub 3 m., Oct., No. 4515 ; near Daba Bur, long. 43° 6′ E., lat. 9° 59′ N., 1,470 m., 1 m., Nov., No. 4612 ; long. 44° 18′ E., lat. 9° 57′ N., 840 m., Oct., No. 4350.

Indigofera arabica Jaub. & Spach—F.T.A. 2 : 103 ; Bak. f. l.c. 165.

SOMALILAND : Debrawen, long. 42° 49′ E., lat. 10° 26′ N., 960 m., on overgrazed stony plains, fls. red, 26 Nov., No. 4653 ; Buramo, Warieto, long. 43° 10′ E., lat. 10° 2′ N., 1,260 m. in stony stream bed, Feb., No. 4915. Vernac.—*Elas.*

I. argentea Linn.—F.T.A. 2 : 97 ; I. articulata *Gouan*—Bak. f. l.c. 154.

SOMALILAND : long. 45° 9′ E., lat. 8° 37′ N., 990 m., fls. dingy yellow, Oct., No. 4171 ; Gorfulai, long. 43° 38′ E., lat. 10° 16′ N., 480 m., fls. red within, green without, Nov., No. 4553 ; Debrawen, long. 42° 10′ E., lat. 10° 5′ N., on alluvial limestone, 1 m., fls. red and green, Feb., No. 4930. Vernac.—*Dureho.*

I. arrecta Hochst. ex A. Rich.—F.T.A. 2 : 97 ; Bak. f. l.c. 155.

SOMALILAND : Mt. Wobleh, long. 43° 17′ E., lat. 10° 15′ N., 1,350 m., on gneiss slopes in open wood and evergreen scrub, 40 cm., Feb., No. 4990.

I. brevicalyx Bak. f.—Bak. f. l.c. 114.

ABYSSINIA : Yuka, long. 41° 40′ E., lat. 9° 27′ N., 1,980 m., on limestone slopes in evergreen scrub, fls. red, Mar., No. 5452.

I. intricata Boiss. Fl. Orient. 2 : 190 (1872).

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., open ground, fls. red, Sept., No. 3951 ; Weramwis valley, long. 43° 50′ E., lat. 10° 15′ N., on sand with Balanites and bush acacias, suffruticose 40 cm., fls. red, Nov., No. 4532. Vernac.—*Hajin.*—Also in Arabia and S. Persia.

I. oblongifolia Forssk.—Bak. f. l.c. 138. I. paucifolia *Del.*—F.T.A. 2 : 88.

SOMALILAND : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,110 m., a small shrub on fringe of Buxus scrub, Oct., No. 4401 ; Dubriat Mt., long. 45° 10′ E., lat. 10° 22′ N., 2,400 m., on limestone slopes, 30 cm. high, Jan., No. 4794.

I. parvula Del.—F.T.A. 2 : 81 ; Bak. f. l.c. 136.

ABYSSINIA : near Fujan Hunjuba, long. 42° 17′ E., lat. 9° 26′ N., 1,950 m., a prostrate herb on granite, Feb., No. 5233.

I. Phillipsiae Bak. f.—Bak. f. l.c. 136.

SOMALILAND : Boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,290 m., in Acacia association, Oct., No. 4109. Vernac.—*Ged Hajin.*

I. Rothii Bak.—F.T.A. 2 : 77 ; Bak. f. l.c. 114.

ABYSSINIA : Kondudo Mt., long. 42° 20′ E., lat. 9° 27′ N., 2,280 m., on limestone, 1·5 m. high, fls. red, Feb., No. 5230.—Endemic.

I. Ruspoli Bak. f. l.c. 109.

SOMALILAND : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ E., 990 m., shrublet, ·2 m., fls. red, Oct., No. 4217. Biji, long. 44° 5′ E., lat. 10° 12′ N., 420 m., Oct., No. 4510. Vernac.—*Jelub.*—Endemic.

I. semitrijuga Forssk.—F.T.A. 2 : 93 ; Bak. f. l.c. 147.

SOMALILAND : Berbera, sea level, prostrate herb with red fls., Jan., No. 4751.

I. spinosa Forssk.—F.T.A. 2 : 77 ; Bak. f. l.c. 113.

Somaliland : Elmis, long. 44° 14′ E., lat. 10° 20′ N., 240 m., on sandy plain in desert grass, silvery, suffruticose, fls. red, Oct., No. 4486 ; No. 4495. Vernac.—*Hajin.*

I. tritoides Bak.—Bak. f. l.c. 108.

Somaliland : Dobo Pass, long. 43° 15′ E., lat. 10° 15′ N., 1,200 m., on gneiss hills, fls. red, Feb., No. 4969.—Endemic.

Crotalaria aegyptiaca Benth.—Bak. f. Legum. Trop. Afr. 25 (1926).

Somaliland : Elmis, long. 44° 14′ E., lat. 10° 20′ N., 270 m., on sandy plains, small shrub 30 cm., Nov., No. 4485.

C. agatiflora Schweinf.—Bak. f. l.c. 38.

Abyssinia : Harar, long. 42° 10′ E., lat. 9° 20′ N., 1,650 m., on granite in evergreen scrub, fls. yellow speckled with purple, Feb., No. 5065.

C. albicaulis Franch.—Bak. f. l.c. 45.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., on alluvial calcareous soil, suffruticose, Sept., No. 3959. Vernac.—*Assuro.*—Endemic.

C. Comanestiana Schweinf.—Bak. l.c. 39.

Somaliland : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., fls. yellow, Oct., No. 4162. Vernac.—*Assuro.*—Endemic.

C. Deflersii Schweinf.—Bak. f. l.c. 47.

Somaliland : Kabrih Bahr, long. 43° 44′ E., lat. 10° 20′ N., 450 m., 1 m. high, Nov., No. 4545. Dobo Pass, long. 43° 15′ E., lat. 10° 15′ N., 1,110 m., Feb., No. 4978. Dobo Pass, long. 43° 15′ E., lat. 10° 15′ N., 1,110 m., gneiss slopes, 30 cm. high, fls. yellow, Feb., No. 4978.

C. dumosa Franch.—Bak. f. l.c. 33.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., on dry alluvium, Sept., No. 4042 ; Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., Oct., No. 4152 ; near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., 990 m., Oct., No. 4316 ; Afard, long. 44° 8′ E., lat. 10° 10′ N., 690 m., lava plateau, Oct., No. 4473 ; Debrawen, long. 42° 49′ E., lat. 10° 26′ N., 960 m., on stony plain, Nov., No. 4652 ; Buramo, long. 43° 10′ E., lat. 10° N., 1,410 m., on gneiss slopes, Jan., No. 4869 ; 4892. Vernac.—*Hajin.*—Endemic.

C. Erlangeri Harms—Bak. f. l.c.

Abyssinia : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,790–3,300 m., on limestone in upper evergreen forest, shrub 3 m., Mar., No. 5308.—Endemic.

C. lachnocarpoides Engl.—Bak. f. l.c. 39.

Abyssinia : near Mulka jibri, long. 42° 16′ E., lat. 9° 24′ N., 1,710 m., ·6 m., fls. yellow, Feb., No. 5235.—Also in Tanganyika.

C. laxa Franch.—Bak. f. l.c. 52.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33, N., 1,290 m., in tree acacia formation, fls. yellow, Sept., No. 3919. Ohob Pass, long. 43° 13′ E., lat. 10° 11′ N., 1,140 m., Feb., No. 4943. Ohob Pass, long. 43° 13′ E., lat. 10° 11′ N., 1,140 m., on limestone, fls. yellow, Feb., No. 4943.

C. microphylla Vahl—F.T.A. 2 : 16 ; Bak. f. l.c. 56.

SOMALILAND : Las Dawan, long. 45° 12′ E., lat. 10° 20′ N., 150 m., shingly slopes, prostrate herb, fls. pink, Jan., No. 4808.

C. petiolaris Franch.—Bak. f. l.c. 38.

SOMALILAND : near Jif pass, long. 43° E., lat. 10° 20′ N., 1,440 m., on limestone rocks beside stream, glaucous plant 2 m. high, fls. yellow, Dec., No. 4714. Vernac.—*Wahara mālē.*

C. Phillipsiae Bak.—Bak. f. l.c. 48.

SOMALILAND : Buramo, long. 43° 10′ E., lat. 10° N., 1,440 m., on gneiss slopes, 30 cm. high, Jan., No. 4862.

C. pycnostachya Benth.—Bak. f. l.c. 49.

SOMALILAND : Deriodera, long. 42° 55′ E., lat. 10° 3′ N., 1,170 m., on rocks, 1 m. high, Nov., No. 4640. Vernac.—*Shuna shuna.*

C. retusa Linn.—F.T.A. 2 : 13 ; Bak. f. l.c. 28.

ABYSSINIA : Harar, long. 42° 10′ E., lat. 9° 20′ E., 1,650 m., on granite, ½ m. high, Feb., No. 5062.

C. Saltiana Andrews—Bak. f. l.c. 37.

SOMALILAND : Buramo, long. 43° 10′ E., lat. 10° N., 1,410 m., in open wood on alluvial flats, 20 cm. high, fls. yellow, Jan., No. 4845. Vernac.—*Gobol Deye.*

ADEN : 800 ft., fls. yellow, Mar., No. 5499.

Argyrolobium ramosissimum Bak.—F.T.A. 2 : 46 ; Bak. f. l.c. 63.

ABYSSINIA : Gara mulata mt., long. 41° 48′ E., lat. 9° 12′ N., 3,000 m., on limestone, fls. yellow, Mar., No. 5315, 5372, 5373. Kondudo Mt., long. 42° 20′ E., lat. 9° 27′ N., 2,760 m., mt. top, fls. yellow, Feb., No. 5223.—Endemic.

A. virgatum Bak.—Bak. f. l.c. 63.

ABYSSINIA : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 3,000 m., on limestone at mt. top, fls. yellow, Mar., No. 5350.

Lotus arabicus Linn.—F.T.A. 2 : 62 ; Bak. f. l.c. 90 ; F.W.T.A. 1 : 399.

ABYSSINIA : Kofajalo, long. 41° 51′ E., lat. 9° 9′ N., 180 m., on limestone in grazed marshy places, fls. yellow-orange, Mar., No. 5278.

Lotus corniculatus Linn.—F.T.A. 2 : 63 ; Bak. f. l.c. 88.

ABYSSINIA : Haramaia, long. 42° E., lat. 9° 24′ N., 1,980 m., close grass sward on border of salt pan, prostrate herb, Mar., No. 5466.

Trifolium semipilosum Fres.—F.T.A. 2 : 56 ; Bak. f. l.c. 80.

ABYSSINIA : Galla Pass, long. 42° 19′ E., lat. 9° 25′ N., 2,250 m., on limestone, fls. white, Feb., No. 5112.

Medicago denticulata Willd.—F.T.A. 2 : 51 ; Bak. f. l.c. 73.

ABYSSINIA : Galla Pass, long. 42° 19′ E., lat. 9° 27′ N., 2,250 m., Feb., No. 5115.

M. lupulina Linn.—F.T.A. 2 : 51 ; Bak. f. l.c. 72.

ABYSSINIA : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,280 m., prostrate, fls. yellow, 21 Feb., No. 5114.

Rhynchosia buramensis Hutch. et E. A. Bruce, sp. nov. foliis minimis, inflorescentiis bifloris, calycis lobis subulatis, seminibus caeruleis valde distincta.

Frutex scandens ; rami vetustiores cortice cinereo fisso, hornotini graciles, purpurascentes et minute pubescentes. *Folia* breviter petiolata, petiolo vix 1 cm. longo ; foliola utrinque minute pubescentia, infra glanduloso-punctata, terminali rhomboideo subacuto circiter 1·5 cm. longo, lateralibus oblique ovatis terminali aequilongis; stipulae ovatae, 2·5 mm. longae, striatae, pubescentes. *Pedunculi* axillares, biflori, usque ad 0·5 cm. longi ; pedicelli 0·4 cm. longi, tenuiter pubescentes. *Calyx* extra glanduloso-puberulus, tubo 4 mm. longo, lobo inferiore lineari-subulato 6 mm. longo, ceteris subaequalibus subulatis 3 mm. longis. *Vexillum* obovatum, 1·8 cm. longum, 1·2 cm. latum, late unguiculatum, basin versus lobulis recurvatis incrassatis instructum ; alae oblongae, 1·4 cm. longae, 0·4 cm. latae ; carina oblique elliptica, subacuta, 1·5 cm. longa. *Ovarium* 5 mm. longum, pubescens et glandulosum, stylo gracili parte inferiore pubescente. *Legumen* oblongum, 2 cm. longum, breviter pubescens. *Semina* globosa, intense caerulea, nitida, 5 mm. diametro.

Somaliland : Buramo, Sō mt., long. 43° 10′ E., lat. 10° N., 1,620 m., on gneiss slopes in open wood, climber, 19 Jan., No. 4850 (type in Kew Herb.).

R. caribaea DC.—F.T.A. 2 : 220 ; Bak. f. l.c. 474.

Somaliland : Elmis, long. 44° 14′ E., lat. 10° 22′ N., 510–600 m., on mt. slopes in open scrub, fls. yellow, Oct., No. 4502. Vernac.—*Geldabar.*

R. flavissima Hochst.—F.T.A. 2 : 219 ; Bak. f. l.c. 475.

Somaliland : Debrawen, long. 43° 10′ E., lat. 10° 5′ N., 990 m., on limestone alluvial, climber, Feb., No. 4942.

R. Memnonia DC.—F.T.A. 2 : 220 ; Bak. f. l.c. 473.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., on drier alluvium, fls. yellow, Sept., No. 4043, slopes between Marmar Her and Marmar Gedke Mts., long. 42° 47′ E., lat. 10° 29′ N., 1,050 m., Nov., No. 4654 ; Afard, long. 44° 8′ E., lat. 10° 10′ N., 540 m., in open scrub, Oct., No. 4479. Vernac.—*Jalale, Mirzi edalis.*

R. minima DC.—F.T.A. 2 : 219 ; Bak. f. l.c. 471.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., Oct., No. 4237.

Rhynchosia Cliffordii Hutch. et E. A. Bruce, sp. nov. affinis *R. erythraeae* Schweinf. sed caulibus procumbentibus, foliolis latioribus racemis paucifloris differt.

Rami procumbentes, cinereo-tomentelli. *Folia* pinnatim trifoliolata, breviter (ad 1·3 cm.) petiolata, foliolis obovato-rotundatis apice mucronatis vel emarginatis basi rotundatis vel leviter angustatis 1·5–2·5 cm. longis usque ad 3 cm. latis discoloribus supra leviter pubescentibus infra molliter cinereo-tomentosis, nervis lateralibus utrinsecus 3–4 ; petioluli laterales 2 mm. longi, terminali paulo longiore et basi articulato ; stipulae subulato-filiformes, ad 7 mm.

longae. *Racemi* axillares, foliis breviores, 2–3-flori, ubique cinereo-tomentelli ; bracteae stipulas simulantes ; pedicelli ad 5 mm. longi. *Calyx* 6 mm. longus, ad medium lobatus, lobis lanceolatis inaequilongis acutis. *Corolla* flava ; vexillum obovatum, apice emarginatum, basi breviter unguiculatum et acute auriculatum, 1·2 cm. longum, 0·8 cm. latum, dorso breviter pubescens ; alae oblongae, 1 cm. longae, glabrae ; carina oblique elliptica, 1 cm. longa. *Ovarium* 3 mm. longum, pubescens ; stylus laxe pubescens, stigmate capitato. *Fructus* oblongus, 1·5–2 cm. longus, molliter et breviter pubescens.

SOMALILAND : Hargeisa, long. 44° E., lat. 9° 35′ N., 150 m., on limestone slopes, fls. yellow, 13 Oct., No. 4269 (type in Kew Herb.). Jifa Meidir, long. 43° 15′ E., lat. 9° 43′ N., 1,650 m., on limestone, prostrate, fls. yellow, 24 Jan., No. 4864.

Cylista scariosa Roxb.—Bak. f. l.c. 461.

SOMALILAND : Deriodera, long. 42° 55′ E., lat. 10° 3′ N., 1,170 m., climber, Nov., No. 4643.

We prefer to follow Baker (Leg. Trop. Afr. p. 461 (1929)) in naming this plant *C. scariosa* Roxb., the material we have seen not being sufficient to decide whether it be different. Three species have been described from Somaliland, authentic specimens of which we have not been able to examine. These are *C. somalorum* Vierh., *C. nogalensis* Chiov. and *C. microphylla* Chiov.

Erythrina Brucei Schweinf.—Bak. f. l.c. 369.

ABYSSINIA : Gorla-Kolubi track, long. 41° 45′ E., lat. 9° 22′ N., 2,520 m., on limestone, tree 20 m. high, fls. scarlet, Mar., No. 5404.

Vigna nilotica Hook. f.—Bak. f. l.c. 404.

SOMALILAND : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,140 m., in Buxus scrub, climber, fls. blue and green, Oct., No. 4410.

V. Schimperi Baker—F.T.A. 2 : 201 ; Bak. f. l.c. 404.

ABYSSINIA : Yuka, long. 41° 40′ E., lat. 9° 25′ N., 210 m., limestone, climber, fls. yellow, Mar., No. 5445.

V. vexillata Benth.—F.T.A. 2 : 199 ; Bak. f. l.c. 413.

ABYSSINIA : Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,280 m., on limestone slopes, Mar., No. 5447.

Dolichos biflorus Linn.—F.T.A. 2 : 210 ; Bak. f. l.c. 448.

ABYSSINIA : near Kofajalo, long. 41° 51′ E., lat. 9° 9′ N., 2,130 m., on limestone, fls. yellowish-green, climber, Mar., No. 5273.

Vicia sativa Linn. var. *angustifolia* Ser.—Bak. f. l.c. 346.

ABYSSINIA : Gara mulata mt., long. 41° 48′ E., lat. 9° 12′ N., 2,850 m., in burnt Erica thicket, fls. pink, Mar., No. 5331.

Stylosanthes flavicans Bak.—F.T.A. 2 : 156 ; Bak. f. l.c. 320.

SOMALILAND : Barataga, long. 44° 1′ E., 10° 5′ N., 1,050 m., tree acacia community, fls. yellow spotted with red, Oct., No. 4523.

Zornia bracteata (Walt.) Gmel. Syst. 1096. Z. tetraphylla *Michx.*—F.T.A. 2 : 159 ; Bak. f. l.c. 323.

ABYSSINIA : near Fuyan Hunjuba, long. 42° 17′ E., lat. 9° 26′ N., 2,010 m., bare ground, granite, prostrate herb, Feb., No. 5231.

Zornia diphylla (Linn.) Pers.—F.T.A. 2 : 158 ; Bak. f. l.c. 322.
SOMALILAND : Dobo Pass, long. 43° 15′ E., lat. 10° 15′ N., 1,200 m., on gneiss, in open wood, Feb., No. 4956.
Desmodium Scalpe DC.—F.T.A. 2 : 164 ; Bak. f. l.c. 328.
ABYSSINIA : Yuka, long. 41° 40′ E., lat. 9° 25′ N., ·3 m. high, fls. red, Mar., No. 5416.
Taverniera glauca Edgew. in Journ. As. Soc. Beng. 16, 2 : 1214 (1874).
ADEN : 150 m., on lava, standard yellowish, keel rose, Mar., No. 5519.—Confined to Arabia.

HAMAMELIDACEAE.

Trichocladus malosanus Baker in Kew Bull. 1897 : 266.
ABYSSINIA : Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,100 m., in Juniperus-Podocarpus forest, tree 4 m., fls. yellow, Mar., No. 5423. Vernac.—*Madissa*.

BUXACEAE.

Buxus Hildebrandtii Baill.—F.T.A. 6, 1 : 610.
SOMALILAND : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 900–1,200 m., shrub 3 m., Oct., No. 4377. Vernac.—*Dusogh*.—Also in Abyssinia.

MYRICACEAE.

Myrica salicifolia Hochst. ex A. Rich.—F.T.A. 6, 2 : 313.
ABYSSINIA : Geldid : long. 41° 48′ E., lat. 9° 15′ N., 2,430 m., tree 6 m., dioecious, Mar., No. 5382.

ULMACEAE.

Celtis Kraussiana Bernh.—F.T.A. 6, 2 : 3.
ABYSSINIA : Fujan Hunjuba, long. 42° 17′ E., lat. 9° 26′ N., 1,920 m., tree 10 m., fr. yellow, Feb., No. 5098. Gafra valley, long. 42° 13′ E., lat. 9° 21′ N., 1,500 m., slender tree to 16 m., trunk smooth, grey, Feb., No. 5240.

BARBEYACEAE.

Barbeya oleoides Schweinf.—F.T.A. 6, 2 : 15.
ABYSSINIA : Gobelli valley, long. 41° 59′ E., lat. 9° 10′ N., 1,710 m., tree 4 m., fls. green, Mar., No. 5270. Vernac.—*Garri*.

MORACEAE.

Dorstenia crispa Engl.—F.T.A. 6, 2 : 73.
SOMALILAND : Jebel Wotni Mt., long. 45° 6′ E., lat. 10° 18′ N., 390 m., fls. greenish yellow, Jan., No. 4802. Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., 10 cm., milky juice, fls. greenish, Oct., No. 4223. Vernac.—*Ged ambar*.
D. foetida (Forssk.) Schweinf.—F.T.A. 6, 2 : 72.
SOMALILAND : Afard, long. 44° 8′ E., lat. 10° 8′ N., 1,050 m., leaves dark green, fls. yellow, aromatic, Oct., No. 4464. Vernac.—*Ambar*.

Ficus capensis Thunb.—F.T.A. 6 : 2 : 101.

Abyssinia : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,340 m., tree 10 m., fruits on short branches, edible, Feb., No. 5135. Vernac.—*Harbu.*

F. glumosa Del.—F.T.A. 6, 2 : 171.

Somaliland : Auboba, long. 43° E., lat. 10° 6′ N., 1,800 m., shrub 3 m., Nov., No. 4627. Vernac.—*Deer Ad.*

F. ingens Miq.—F.T.A. 6, 2 : 121.

Somaliland : Auboba, 1,800 m., shrub 3 m., Nov., No. 4626. Biju-Suldan, long. 43° E., lat. 10° 20′ N., 1,050 m., spreading tree 5 m., Dec., No. 4691. Vernac.—*Deer Ad, Lufo.*

F. populifolia Vahl—F.T.A. 6, 2 : 189.

Somaliland : Bir Dai, long. 44° 17′ E., lat. 9° 55′ N., 900 m., tree 8 m., Oct., No. 4335. Vernac.—*Nidir. Hamash.*

F. salicifolia Vahl—F.T.A. 6, 2 : 115.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,440 m., tree 3 m., Sept., No. 4052. Vernac.—*De-er.*

F. Sycomorus Linn.—F.T.A. 6, 2 : 95.

Somaliland : Camp 4, long. 44° 16′ E., lat. 10° N., 900 m., tree 10 m., fruit on branches remote from leaves, Oct., No. 4354. Vernac. *Dare.*

F. Thonningii Blume—F.T.A. 6, 2 : 187.

Abyssinia : Hara, long. 42° 10′ E., lat. 9° 20′ N., 1,620 m., tree 4 m., Feb., No. 5061. Vernac.—*Shorla.*

F. vasta Forssk.—F.T.A. 6, 2 : 194.

Somaliland : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,200 m., tree 8 m., fragrant in hot sun, fruit edible, Oct., No. 4417. Deriodera, long. 42° 55′ E., lat. 10° 3′ N., 1,170 m., tree 20 m., Nov., No. 4639. Vernac.—*Berde.*

Urticaceae.

Urera hypselodendron Wedd.—F.T.A. 6, 2 : 255.

Abyssinia : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,460 m., climbing, fls. red, Feb., No. 5144.

Debregeasia salicifolia Rendle—F.T.A. 6, 2 : 295.

Abyssinia : Geldid, long. 41° 48′ E., lat. 9° 15′ N., 2,280 m., shrub 4 m., fls. pinkish, Mar., No. 5393.—Occurs eastwards as far as the Western Himalayas.

Forskohlea viridis Ehrenb. ex Desf.—F.T.A. 6, 2 : 302.

Somaliland : Wobleh Mt., long. 43° 17′ E., lat. 10° 15′ N., 1,200 m., fls. yellowish, smells like mignonette, Nov., No. 4594. Aden, 150 m., annual, stems red, fls. green, Mar., No. 5517.

Celastraceae.

Gymnosporia arbutifolia (Hochst.) Loes. in Engl. Bot. Jahrb. 17 : 547 (1893). Celastrus arbutifolius *Hochst.*—F.T.A. 1 : 363.

Abyssinia : Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,100 m., on limestone slopes, in lower Juniperus-Podocarpus forest, bushy tree 5 m., fls. cream, Mar., No. 5444. Vernac.—*Kombolcha.*—Also in Eritrea.

G. buxifolia (Linn.) Szyszyl. Pl. Rehmann. 2 : 34 (1888).

ABYSSINIA : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,340 m., in remnants of Podocarpus forest, spreading tree to 7 m., fils. cream, Feb., No. 5131. Vernac.—*Kombolcha.*

G. luteola (Del.) Szyszyl. Pl. Rehmann. 2 : 34 (1888). Celastrus luteolus *Del.*—F.T.A. 1 : 363.

SOMALILAND : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,110–1,260 m., common in Buxus scrub, shrub 3 m., fls. white, Oct., No. 4419. Libah Mele Range, long. 43° E., lat. 10° 20′ N., 1,590–1,710 m., on schist rocks with *Juniperus*, shrub 4 m., fls. cream, Dec., No. 4684.

ABYSSINIA : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,550 m., on limestone in evergreen forest, 6 m., fls. cream, Mar., No. 5352. Vernac.—*Sarad ; Deg wun* (Somali).

G. senegalensis (Lam.) Loes. in Engl. Bot. Jahrb. 17 : 541 (1893) ; F.W.T.A. 1 : 445, fig. 158. Celastrus senegalensis *Lam.*—F.T.A. 1 : 361.

SOMALILAND : Biju Suldan, long. 43° E., lat. 10° 20′ N., on rocks with *Buxus, Ficus, Cordia*, shrub 4 m., fls. cream, Dec., No. 4692. Vernac.—*Jaad.*

G. serrata (Hochst.) Loes. in Engl. Bot. Jahrb. 41 : 302 (1908). Celastrus serratus *Hochst.*—F.T.A. 1 : 362.

SOMALILAND : Mt. Wobleh, long. 43° 17′ E., lat. 10° 15′ N., 1,530 m., in evergreen scrub-Juniper forest, shrub 3 m., fls. cream, Feb., No. 4985. Vernac.—*Dubobeis.*—Also in Abyssinia.

ICACINACEAE.

Trematosperma cordatum Urb. in Ber. Deutsch. Bot. Ges. 1 : 182 (1883).

SOMALILAND : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,200–1,260 m., on edge of Buxus scrub on southern, dry side of the ridge, spherical white stem up to 1 m. in diameter, Oct., No. 4420. Vernac.—*Adalis ad.*—Endemic.

SALVADORACEAE.

Azima tetracantha Lam.—F.T.A. 4, 1 : 22.

SOMALILAND : Simodi, long. 43° 30′ E., lat. 10° 5′ N., 1,200–1,740 m., shrub 1 m., Nov., No. 4578.

Dobera glabra A.DC. in DC. Prod. 17 : 31 (1873). D. Roxburghii *Planch.*—F.T.A. 4, 1 : 21.

SOMALILAND : Jalelo, long. 44° 14′ E., lat. 9° 45′ N., 1,080 m., shrub 5 m., fls. white, fruit edible, Oct., No. 4301. Vernac.—*Garas.*

Salvadora persica Linn.—F.T.A. 4, 1 : 23.

SOMALILAND : Jalelo, shrub 5 m., fresh twigs used for tooth-brushes, Oct., No. 4300. Aden : 150 m., tree 3–4 m., fls green, berries red, Mar., No. 5506. Vernac.—*Adi* (Somali) ; *Ruk* (Aden).

Olacaceae.

Ximenia americana Linn.—F.T.A. 1 : 346 ; F.W.T.A. 1 : 458.

Abyssinia : Gafra Valley, long. 42° 13′ E., lat. 9° 21′ N., 1,500 m., in *Acacia* scrub, bush 4 m., fls. greenish cream, Feb., No. 5243. Vernac.—*Unkwoi.*

Opiliaceae.

Opilia strobilifera Hutch. et E. A. Bruce, sp. nov. affinis *O. celtidifoliae* Endl., sed foliis anguste oblanceolatis ad obovato-ellipticis haud acuminatis differt.

Frutex ad 2 m. altus ; rami vetustiores fere 1 cm. crassi, hornotini cinereo-virides, puberuli. *Folia* breviter petiolata, anguste oblanceolata ad obovato-elliptica, apice obtusa vel rotundata, interdum emarginata, basi subacuta et 3–5-nervia, 2·5–3·5 cm. longa, 0·6–2 cm. lata, crassa, puberula. *Inflorescentiae* alabastro strobiliformes, plerumque in ramis vetustioribus congestae ; bracteae late triangulari-ovatae, ciliatae ; pedicelli 2 mm. longi, minute puberuli. *Calyx* annularis, carnosus, minute puberulus. *Petala* flava, 5, ovato-elliptica, subacuta, 2 mm. longa. *Stamina* 5, filamentis 1 mm. longis. *Disci glandulae* 5, magnae, ovoideae, inflexae. *Ovarium* ellipsoideum, glabrum, stylo perbrevi crasso.

Somaliland : Daba Bur, long. 42° 54′ E., lat. 10° 9′ N., 1,500 m., on steep limestone slope, shrub 2 m., fls. cream, 22 Nov., No. 4636 (type in Kew Herb.). Buramo, long. 43° 10′ E., lat. 10° N., 1,080–1,410 m., stony slopes in *Acacia* open wood, shrub 2 m., leaves glaucous, fls. yellow, inconspicuous, 27 Jan., No. 4868. Vernac.—*Eri.*

Loranthaceae.

Loranthus Acaciae Zucc.—F.T.A. 6, 1 : 280.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., fls. flame red, Sept., No. 3945. Vernac.—*Dilo yahen.*

L. curviflorus Benth. ex Oliv.—F.T.A. 6, 1 : 279.

Somaliland : Dara weina, long. 44° 80′ E., lat. 9° 48′ N., 1,110 m., fls. scarlet, Oct., No. 4286. Afard, long. 44° 8′ E., lat. 10° 10′ N., 540 m., fls. red, Oct., No. 4456. Vernac.—*Dilo yahen.*

L. Dregei Eckl. et Zeyh. var. *kerenicus* Sprague—F.T.A. 6, 1 : 312.

Somaliland : Wobleh, long. 43° 17′ E., lat. 10° 15′ N., 1,590 m., Nov., No. 4593. Auboba, long. 43° E., lat. 10° 6′ N., 1,800 m., fls. pink and green, Nov., No. 4625. Vernac.—*Dilo yahen.*

L. dschallensis Engl.—F.T.A. 6, 1 : 286.

Somaliland : Buramo-Warieto tug, long. 43° 10′ E., lat. 10° 2′ N., 1,050 m., on *Acacia*, fls. dull yellow, Jan., No. 4906. Vernac.—*Dilo yahen.*

L. Fischeri Engl.—F.T.A. 6, 1 : 331.

Somaliland : Hargeisa, long. 44° 3′ E., lat. 9° 33′ N., 1,260 m., fls. red, Sept., No. 4064. Vernac.—*Dilo yahen.*

L. Kelleri Engl.—F.T.A. 6, 1 : 337.

SOMALILAND : Boundary, long. 47° 10′ E., lat. 8° 57′ N., 1,260 m., corolla tube dark purple red, lobes red and yellow, Sept., No. 4077. Hargeisa, 1,350 m., fls. green below, red above, Oct., No. 4226. Vernac.—*Dilo yahen.*—Endemic.

L. nummulariifolius Franch.—F.T.A. 6, 1 : 281.

SOMALILAND : Auboba, long. 43° E., lat. 10° 6′ N., 1,740 m., fls. red, Nov., No. 4629. Vernac.—*Dilo yahen.*—Endemic.

L. panganensis Engl.—F.T.A. 6, 1 : 316.

SOMALILAND : Marmar range, long. 42° 42′ E., lat. 10° 32′ N., 1,110 m., leaves soft and succulent, fls. red and orange, Nov., No. 4663. Vernac.—*Dilo yahen.*

Loranthus sarertaensis Hutch. et E. A. Bruce, (§ Lepidoti) sp. nov. affinis *L. erythraeo* Sprague et *L. usuiensi* Oliv. ab ambobus corolla fere glabra differt.

Ramuli hornotini brevissime pubescentes, circiter 4 mm. crassi, vetustiores 1·3 cm. crassi, purpurascentes, puberuli. *Folia* anguste ovata vel late lanceolata, apice et basi rotundata, 10–12 cm. longa, 4–6 cm. lata, sicco utrinque crebre verrucosa, nervis lateralibus utrinque indistinctis circiter 3–4-jugis ; petioli 1·5 cm. longi. *Fasciculi* pluriflori ; pedicelli 2 mm. longi, crassi, pubescentes ; bractea cymbiformis, 3 mm. longa, utrinque stellato-tomentosa. *Receptaculum* 2·5 mm. longum, breviter pubescens. *Calyx* cupularis, 1·25 mm. longus, brevissime denticulatus, extra et margine breviter pubescens. *Corolla* 6 cm. longa, extra glabra vel fere glabra, lobis lineari-spatulatis 1·4 cm. longis subacutis. *Filamenta* fere 1 cm. longa ; antherae 3 mm. longae, loculis 4 vertice dispositis ; stylus glaber, circiter 5·5 cm. longus, superne angulatus ; stigma ovoideum.

ABYSSINIA : Slopes of Sarerta Mt., long. 42° 19′ E., lat. 9° 20′ N., 2,400 m., fls. orange, 23 Feb., No. 5194 (type in Kew Herb.).

L. Schimperi Hochst. ex A. Rich.—F.T.A. 6, 1 : 337.

SOMALILAND : Camp 4, long. 44° 16′ E., lat. 10° N., 900 m., fls. yellow, Oct., No. 4353.

var. *parviflorus* Hutch. et E. A. Bruce, var. nov., a typo corollis dimidio brevioribus differt.

SOMALILAND : Hargeisa, 1,260 m., fls. yellow, Sept., No. 3947. Hargeisa, 1,380 m., fls. orange, Oct., No. 4277. Simodi, long. 43° 30′ E., lat. 10° 5′ N., 1,350 m., fls. yellow, fr. orange-red, Nov., No. 4568.

ABYSSINIA : Harar-Kofajalo Road, long. 41° 55′ E., lat. 9° 9′ N., 360 m., fls. yellow, Mar., No. 5271. Vernac.—*Dilo yahen.*

L. Thomsonii Sprague—F.T.A. 6, 1 : 276.

SOMALILAND : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., fls. red, Oct., No. 4167. Vernac.—*Dilo yahen.*—Endemic.

L. ugogensis Engl.—F.T.A. 6, 1 : 336.

ABYSSINIA : Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,130 m., fls. red-yellow, Mar., No. 5449.

Viscum nervosum Hochst. ex A. Rich.—F.T.A. 6, 1 : 397.

Abyssinia : Fuyan Hunjuba, long. 42° 17′ E., lat. 9° 26′ N., 1,920 m., fls. cream minute, Feb., No. 5097. Vernac.—*Mutukonia.*

V. Schimperi Engl.—F.T.A. 6, 1 : 407.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., fls. yellow, Sept., No. 3946. Vernac.—*Dilo yahen.*

V. tuberculatum A. Rich.—F.T.A. 6, 1 : 396.

Somaliland : Libah Hele Mts., long. 43° E., lat. 10° 20′ N., fls. yellow, ripe fruits red, Dec., No. 4696. Vernac.—*Dilo yahen.*

Santalaceae.

Osyridicarpos Schimperianus A.DC.—F.T.A. 6, 1 : 432.

Abyssinia : Harar, long. 42° 10′ E., lat. 9° 20′ N., 1,620 m., on granite, in hedges and evergreen scrub, weak ascending shrub, fls. greenish yellow, Feb., No. 5056.

Osyris compressa (Berg.) A.DC. in DC. Prod. 14 : 634 (1857). Osyris abyssinica *Hochst.*—F.T.A. 6, 1 : 433.

Somaliland : Simodi, long. 43° 30′ E., lat. 10° 5′ N., 1,740 m., on open slopes of mt. top, shrub 1 m. high, fls. yellowish, Nov., No. 4581.

Abyssinia : Harar, 1,920 m., on limestone, Feb., No. 5011. Vernac.—*Asāso.*

Thesium radicans Hochst. ex A. Rich.—F.T.A. 6, 1 : 415.

Somaliland : Boundary 7 miles W. of long. 44° E., lat. 9° N., 1,350 m., on grass roots, fls. white, Oct., No. 4230.

T. Schweinfurthii Engl.—F.T.A. 6, 1 : 416.

Abyssinia : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,790 m., open grass, fls. white, Mar., No. 5333.

Rhamnaceae.

Sageretia spiciflora (A. Rich.) Chiov. in Ann. di Bot. 10 : 444, in obs. (1912).

Somaliland : Mt. Wobleh, long. 43° 17′ E., lat. 10° 15′ N., 1,740 m., on mt. top with *Juniperus procera*, shrub 2 m., fls. cream, Nov., No. 4592. Abyssinia : Gobelli, long. 41° 59′ E., lat. 9° 10′ N., 1,590 m., in evergreen scrub on granite slopes, fls. yellowish, 3 m., Mar., No. 5266. Vernac.—*Gutamē* (Abyss.).—Also in Eritrea and Arabia.

Berchemia discolor Hemsl.—F.T.A. 1 : 381.

Somaliland : Daraweina, No. 4283.

Helinus mystacinus (Ait.) E. Mey.—F.T.A. 1 : 385.

Somaliland : Jifa Uri, long. 43° 22′ E., lat. 9° 42′ N., 1,680 m., evergreen scrub or gneiss kopje, climber, fls. white, Jan., No. 4835. Buramo, long. 43° 10′ E., lat. 10° 2′ N., 1,170 m., in gneiss ravine, Jan., No. 4902.

Abyssinia : near Fuyan Hunjuba, long. 42° 17′ E., lat. 9° 26′ N., 1,950 m., Feb., No. 5232.

Rhamnus prinoides L'Hérit.—F.T.A. 1 : 382.

Abyssinia : Fuyan Hunjuba, long. 42° 17′ E., lat. 9° 26′ N., 1,920 m., on granite, fls. green, fr. dark red, Feb., No. 5102. Vernac.—*Gesho.*

R. Staddo A. Rich.—F.T.A. 1 : 382. R. infusionum *Del.* ex *Ferr. & Galin.*

Somaliland : Mt. Wobleh, long. 43° 17′ E., lat. 10° 15′ N., 1,290 m., in open wood evergreen scrub, shrub 2 m., fls. greenish cream, Feb., No. 4979.

Abyssinia : Slopes of Sarerta Mt., long. 42° 19′ E., lat. 9° 30′ N., 2,400 m., in forest on limestone, bushy tree 4 m., fls. greenish yellow, Feb., No. 5180 ; 5181. Vernacs.—*Jajale* (Somali), *Gadida* (Abyss.) —Also in Eritrea.

Ziziphus Hamur Engl. in Ann. Ist. Bot. Rom. 7 : 19 (1897).

Somaliland : Afard, long. 44° 8′ E., lat. 10° 10′ N., 510 m., shrub 4 m., fls. cream, Oct., No. 4481. Vernac.—*Hamud.*—Endemic.

Z. mauritiana Lam. Encycl. Meth. 3 : 319 (1789). Z. jujuba *Lam.*—F.T.A. 1 : 379 ; F.W.T.A. 1 : 471, not of *Mill.*

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,320 m., fairly frequent tree 12 m. high, Sept., No. 3900. Vernac.—*Gob.*

Z. mucronata Willd.—F.T.A. 1 : 380 ; F.W.T.A. 1 : 470.

Somaliland : Hargeisa, long. 44° E., lat. 9° 35′ N., 1,380 m., on sandstone rocks, tree 4 m., Oct., No. 4258. Vernac.—*Gob yer.*

Ampelidaceae.

Cissus adenocaulis Steud. ex A. Rich. Fl. Abyss. 1 : 111 (1847) ; F.W.T.A. 1 : 477.

Abyssinia : Harar, long. 42° 10′ E., lat. 9° 20′ N., 1,650 m., in evergreen scrub, fls. yellow tipped with red, Feb., No. 5049.

C. cyphopetala Fresen. in Mus. Senckenberg 2 : 282 (1837–45).

Abyssinia : Boesesa valley, long. 42° 18′ E., lat. 9° 29′ N., 2,100 m., on limestone, on margin of evergreen forest, fls. cream, 2,100 m., Feb., No. 5175.

C. jatrophoides (Welw.) Planch. in DC. Monog. Phan. 5 : 579 (1887).

Abyssinia : near Mulkajibri, long. 42° 16′ E., lat. 9° 24′ N., 1,800 m., erect herb full of sap, 0·6 m. high, fls. cream, Feb., No. 5234. Vernac.—*Mido Korbo.*

C. nivea Hochst. ex Schweinf. Beitr. Fl. Aethiop. 83 (1867).

Abyssinia : Kofa jalo, long. 41° 51′ E., lat. 9° 9′ N., 2,250 m., in *Juniperus* forest, climber, Mar., No. 5276.—Also in Eritrea.

C. quadrangularis Linn. Mant. 39 (1767) ; F.W.T.A. 1 : 475.

Somaliland : Biji, long. 44° 5′ E., lat. 10° 12′ N., 420 m., on sandy plains, Oct., No. 4511. Vernac.—*Gaad.*

C. rotundifolia (Forssk.) Vahl Symb. Bot. 3 : 19 (1790).

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., Oct., No. 3949. Vernac.—*Armo.*

C. Schimperi Hochst. ex A. Rich. Fl. Abyss. 1 : 114 (1847).

Abyssinia : Harar, No. 5049.—Endemic.

C. Schweinfurthii Planch. in DC. Monog. Phan. 5 : 591 (1887).

Somaliland : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,200 m., in *Buxus* scrub, fls. greenish yellow, Oct., No. 4422. Vernac.—*Armo Goria.*

C. serpens Hochst. ex A. Rich. Fl. Abyss. 1 : 111 (1847).

Somaliland : Boundary, long. 44° 15′ E., lat. 8° 58′ N., 1,260 m., amongst *Acacia*, fls. yellow, Sept., No. 4141. Vernac.—*Armo malehle* or *gorie.*

Rhoicissus erythrodes (Fresen.) Planch. in DC. Monog. Phan. 5 : 465 (1887).

Abyssinia : Harar-Gobelli Road, long. 42° 6′ E., lat. 9° 17′ N., 1,890 m., on granite in lower evergreen formation, fls. yellow with red tips, Mar., No. 5252.

R. Revoilii Planch. in DC. Monog. Phan. 5 : 469 (1887).

Somaliland : Libah Hele, Birda, long. 43° E., lat. 10° 20′ N., 1,620–1,670 m., on limestone in Buxus scrub, fls. chocolate, Nov., No. 4677. Vernac.—*Armo saged.*

Rutaceae.

Fagara chalybea Engl. Pflanzenfam. 3, 4 : 118 (1890).

Somaliland : Libah Hele Mt., long. 43° E., lat. 10° 20′ N., 1,560 m., on limestone in *Buxus-Juniperus* scrub, shrub 4 m., Dec., No. 4695. Vernac.—*Meeh Godleh.*

F. usambarensis Engl. in Notizblatt. Bot. Gart. Berl. 3 : 84 (1900).

Abyssinia : Yuka, long. 41° 40′ E., lat. 9° 27′ N., 1,980 m., on limestone slopes, in evergreen scrub, 3–4 m., fr. Mar., No. 5451.

Fagaropsis Gillettii Chiov., sp. nov. affinis *F. Hildebrandtii* (Engler) Milne-Redhead quae differt praecipue baccis bilobis bilocularibus ; fructibus sphaericis appropinquatur *F. angolensi* (Engler sub *Clausenopsi*) Chiov., comb. nov. quae arbor procera foliis 3–4-jugis multo majoribus, baccis 2–3-plo majoribus.

Frutex circ. 2 m. altus, ramis oppositis angulo semirecto divaricatis cylindraceis cicatricosis cortice cinereo-fusco tectis, lenticellis leviter prominentibus subrotundis cortice concoloribus rima longitudinali praeditis sparsis, junioribus adpresse hirtellis ; macroblasti internodiis 5–15 mm. longis, brachyblasti torulosi 5–15 mm. longi, 2 mm. circ. crassi. *Folia* opposita, imparipinnata 2-juga, rarius unijuga ; petiolus 7–15 mm. longus, gracilis, supra planus, 0·5 mm. latus, subtus teres, minute et sparse puberulus ; rachis inter juga petiolo omnino similis 6–11 mm. longa ; foliola chartacea sicco pallide virentia, in limbo parce diaphano-punctata, in oris integris leviter deflexis glandulis permagnis tumidis translucidis numerosis densis leviter venulata ; foliolum terminale sessile vel raro petiolulo 3–5 mm. longo suffultum, coeteris majus obovatum 17–32 mm. longum 11–15 mm. latum basin versus e ½ vel ⅓ superiore parte sensim lineis rectis vel paullum concavis attenuatum, apice plerumque breviter angustatum, summitate obtusum, interdum plus

minusve rotundatum, raro utrisque extremitatibus subaequaliter breviter contractum ; lateralia oblique ovata vel ovato-lanceolata, jugi superioris majora 11–23 mm. longa 4–10 mm. lata ; inferioris 5–15 mm. longa 3–8 mm. lata, latere anteriore angustiore inferne cuneato, posteriore latiore basi rotundato ; superficies utraeque glabrae, sed costa subtus valde prominens adpresse puberula, nervis utrinque 5–6 subtus leviter prominulis, venis omnino obsoletis. *Inflorescentiae* foliorum dimidiam partem aequantes, in brachyblastis sessiles vel pedunculo 3 mm. longo, ramis oppositis tetragonis ; bracteae ovatae, 1·5–2 mm. longae, 0·5–1 mm. latae, puberulae ; pedicelli fructiferi 6–8 mm. longi, tetragoni, puberuli. *Baccae* globosae, rubrae, 6–7 mm. diam. magnae, scrobiculato-punctatae, endocarpio membranaceo albido, 3–4-loculares. *Semina* 4–5, valde compressa, subrotunda vel ellipsoidea, 2·5–3 mm. longa, 2·5 mm. lata, 1·2 mm. spissa, testa coriacea ochroleuca vel flava.

SOMALILAND : on calcareous rocks with *Olea, Dodonaea viscosa, Acokanthera Schimperi*, at Buramo, 1,500 m., long. 43° 10′ E., lat. 10° N., 16.1.1933, *Gillett* n. 4844 (type in Kew and Bologna Herb.).

Teclea nobilis Del. in Ann. Sci. Nat. Ser. 2, 20 : 90 (1843). Toddalia nobilis *Hook.* f.—F.T.A. 1 : 306.

SOMALILAND : Afard, long. 44° 8′ E., lat. 10° 8′ N., 1,170 m., in Buxus scrub, shrub 3 m., fls. yellow, fragrant, Oct., No. 4467.

ABYSSINIA : Galla Pass, long. 47° 19′ E., lat. 9° 28′ N., 2,340 m., scrub to *Podocarpus* forest, 3 m., fls. cream, Feb., No. 5136. Vernac.—*Buro* (Somali).

T. pilosa (Engl.) Verdoorn in Kew Bull. 1926 : 407.

SOMALILAND : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,140 m., in *Buxus* scrub, shrub 3 m., fls. greenish yellow, aromatic ; Oct., No. 4407. Vernac.—*Bara gurun.*

Toddalia asiatica Lamk. Illustr. 2 : 116 (1793).

ABYSSINIA : slopes of Sarerta Mt., long. 42° 19′ E., lat. 9° 30′ N., about 2,400 m., in evergreen forest, 4 m., fls. cream, Feb., No. 5182. Vernac.—*Gumuro.*

SIMARUBACEAE.

Balanites aegyptiaca Del.—F.T.A. 1 : 315 ; F.W.T.A. 1 : 484.

SOMALILAND : Dara weina, long. 44° 8′ E., lat. 9° 40′ N., up to 1,230 m., on sand, in *Acacia-Aloe* community, tree 5 m., fls. greenish-yellow, Oct., No. 4284. Vernac.—*Got.*

B. glabra Mildbr. & Schlecht. in Engl. Bot. Jahrb. 51 : 163 (1913).

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., among *Acacia* and *Aloe*, tree 3–5 m., fls. greenish, Sept., No. 3941.

ABYSSINIA : Gobelli, long. 41° 59′ E., lat. 9° 10′ N., 1,380 m., on granite in *Acacia* open wood, tree 5 m., ripe fruit orange, fls. green, Mar., No. 5262. Vernac.—*Kidi* (Somali).

B. orbicularis Sprague in Kew Bull. 1908 : 57.

SOMALILAND : Afard, long. 44° 8′ E., lat. 10° 10′ N., 510 m., in deep sand at mountain foot, tree 6 m., fls. green, Oct., No. 4431. Vernac.—*Kulan.*—Also in Uganda.

Brucea antidysenterica Mill.—F.T.A. 1 : 309 ; F.W.T.A. 1 : 486.
Abyssinia : Mulkajibri, long. 42° 16′ E., lat. 9° 24′ N., 1,650 m., on granite, shrub 3 m., fls. brownish green, fr. red, Feb., No. 5083. Vernac.—*Hadawi*.

Burseraceae.

Boswellia Bricchettii (Chiov.) Chiov., comb. nov. Commiphora Bricchettii *Chiov.* Fl. Somala 2 : 58 (1932).
Somaliland : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., shrub 3 m., fls. white, Oct., No. 4211. Vernac.—*Ged Fogr*.—Endemic.

B. Carteri Birdw. in Trans. Linn. Soc. 27 : 143 (1870).
Somaliland : Marmar Gedke range, long. 42° 42′ E., lat. 10° 32′ N., on limestone rocks, tree 4 m., Nov., No. 4662. Vernac.—*Medi*.—Also in Arabia.

Commiphora africana Engl. in DC. Monog. Phan. 4 : 14 (1883).
Somaliland : Hargeisa, long. 42° 2′ E., lat. 9° 34′ N., 1,290 m., sandy soil among *Aloes*, shrub 2 m., Oct., No. 4278. Rarele Mt., long. 43° 15′ E., lat. 10° N., 1,800 m., tree 5 m., Dec., No. 4734. Vernac.—*Disin Kakabi*.

C. ancistrophora Chiov. Fl. Somala 2 : 111 (1932).
Somaliland : Afard, long. 44° 39′ E., lat. 8° 47′ N., 1,140 m., shrub 1 m., leaves greyish, Oct., No. 4144. Boundary Pillar 93, shrub 2 m., very aromatic, Oct., No. 4203. Vernac.—*Alioi eh aliboy. Daseno. Garon*.—Endemic.

Commiphora Anglosomaliae Chiov. sp. nov., incertae sedis, nullis speciebus notis stricte referenda.

Rami elongati virgati 3–4 mm. spissi, internodiis 1–3 cm. longis, hornotinis cortice cinereo leviter plicato-succulento glabro opaco tectis, lenticellis sparsis parum manifestis et elevatis minutis rotundis vel transverse ellipticis 0·5 mm. latis vel 0·6 mm. longis, fissura transversa ; brachyblasti 2–23 mm. longi 3 mm. diam., crassi, creberrime annulatim corrugati, apice squamis minutis triangularibus 1·5 mm. longis et fere latis subcoriaceis nitidulis brunneo-rufescentibus praediti, interdum in spinam 5–10 mm. longam conicam abeuntes quandoque alternatim dispositi ramulos anfractos spinosos formantes. *Folia* in specimine desunt. *Flores* 3–5 fasciculati in brachyblastis ; pedicelli 0·5–1 mm. longi, tenues, glabri. *Calyx* 1·5 mm. longus, tubo obtuse tetragono 1·25 mm. diam. lato, apice dentibus 4 ovato-triangularibus 0·5 mm. longis 0·7 mm. latis, apice obtusis ut tubus totus fusco coloratis, oris angustissime albo-marginatis. *Petala* sicco purpurea, linearia, 6 mm. longa, 0·6–0·7 mm. lata, apice rotundata, basi e medio sensim angustata, stricte appropinquata, apicibus curvato-divergentibus. *Stamina* cum antherarum apicibus 1 mm. sub petalorum summitates attingentia.
Somaliland : Auboba, long. 43° E., lat. 10° 1′ N., 1,590 m., shrub 2 m., fls. wine red tipped with dark green, 21 Nov., No. 4632 (type in Kew Herb.). Vernac.—*Hagar medu*.

Commiphora Bruceae Chiov. sp. nov. (§*Glabra, Integrifoliolata*).

Frutex ramosissimus undique glaberrimus, ramis adultis cortice plicato-anguloso violaceo-fusco, leviter cineraceo, elenticelloso: macroblasti spinosi, 1·5–6 mm. longi, fere angulo recto patentes; brachyblasti 1–2 mm. longi, folia fasciculata 3–5 et flores 1–3 fasciculatos gerentes. *Folia* omnia simplicia, glabra; petiolus 1 mm. longus, supra planus vel junior leviter sulcatus; laminae subcoriaceae, lineari-lanceolatae, 10–15 mm. longae, prope basin rotundatae vel breviter cuneatae, 2–3 mm. latae, marginibus subparallelis e $\frac{1}{4}$ vel $\frac{1}{5}$ suprema parte angustatae, apice acutae vel obtusiusculae, utrinque glaberrimae, sicco pallide virides subconcolores; margines integerrimi, plani vel leviter undulati, concolores, non incrassati; costa subtus valde elevata, subaurantiaca, supra plana vel vix elevata; nervi utrinque 5–6 filiformes subtilissimi, subtus colore obscuro vix manifesti, supra omnino evanidi. *Flores* minimi; pedicellus 0·2–0·5 mm. longus. *Calyx* cupulatus, 1 mm. longus, obtuse tetragonus, dentibus 4 ovatis obtusiusculis $\frac{1}{3}$ vel $\frac{1}{4}$ calycis aequantibus, apice obtusiusculis, sinu rotundato separatis. *Petala* 4, anguste linearia, 4–5 mm. longa, 0·6 mm. lata, marginibus parallelis, apice obtusa, leviter cucullato-emarginulata.

Speciminis fructiferi folia angusta elliptico-oblonga vel elliptico-lanceolata 3–4·5 cm. longa, marginibus subparallelis, 4–6 mm. lata, apice attenuato-acuta vel rotundato-obtusissima, basi anguste rotundata vel breviter cuneata. Bacca ovoidea, 10–12 mm. longa, 8–9 mm. lata, apice apiculata; nucleus compressus, orbicularis, 5–6 mm. longus et latus, 3–3·5 mm. spissus, 2-locularis, loculis aequalibus monospermis. Pseudoarillus non visus; exocarpium valde succoso-resinosum, flavescens.

SOMALILAND: Boundary, long. 44° 15′ E., lat. 8° 58′ N., 1,260 m., shrub 2 m., fls. dull yellow, 30 Sept., No. 4102 (type in Kew Herb.).

SOMALILAND: Jalelo, long. 44° 14′ E., lat. 9° 45′ N., 1,080 m., shrub 1 m., 16 Oct., No. 4291. Vernac.—*Goah.*

C. candidula Sprague in Hook. Ic. Pl. t. 3106 (1927).

SOMALILAND: Boundary, long. 44° 15′ E., lat. 8° 57′ N., 1,260 m., in shallow soil, shrub 2 m., stem with milky juice, leaves aromatic, much grazed, Sept., No. 4099. Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., fls. green, Oct., No. 4164. Vernac.—*Go-ah; Rahan-reb.*

C. crassispina Sprague l.c. t. 3107.

SOMALILAND: Duwi, long. 44° 15′ E., lat. 10° 5′ N., 840–990 m., open scrub, shrub 3 m., leaves glossy, Oct., No. 4386. Vernac.—*Domod.*

Commiphora crenato-lobata Chiov. sp. nov. (§*Pilosa, Serratifoliolata*).

Frutex videtur inermis vel subspinosus, ramis vetustis cortice cinereo in violaceum vergente, serius longitudinaliter fissurato; brachyblasti 2–5 mm. longi, 2–5 mm. spissi. *Folia* in brachyblastis 3–5 fasciculata, omnia 3-foliolata, foliolis sessilibus valde inaequalibus; petiolus gracilis, 2–6 mm. longus, pilis minutis densiusculis

patentibus cinereo-pubescens ; foliolum medium obovatum, 10–12 mm. longum, 10–18 mm. latum, apice rotundatum, vel saepe plus minusve profunde trilobatum, e $\frac{1}{2}$ vel $\frac{1}{3}$ superiore basin versus sensim cuneato-angustatum ; supra sicco pallide viride, pilis brevissimis patentibus sparsum, subtus subalbicans in nervis et venis similibus densiuscule indutum ; costa et nervi duo inferiores circ. $\frac{1}{3}$ inferiore inserti, caeteris crassiores et 2–3 superiores graciliores supra subtusque flavescentes, supra explanati subtus prominuli ; venae eleganter reticulatae, colore fusco manifestae, explanatae ; margines antici plus minusve manifeste trilobulati et grosse crenato-dentati, dentibus rotundatis circ. 2 mm. latis 0·5–1 mm. longis. *Foliola* lateralia inaequilateraliter subrotunda, 2–5 mm. longa et lata, crenis 2–4 incisa ut medianum colore, trichomate et nervositate insignita.

Specimina tantum foliosa.

Somaliland : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., bush 3 m., fls. reddish, 5 Oct., No. 4155 (type in Kew Herb.). Vernac.—*Mogoleh.*

C. crenulata (A. Terracc.) Chiov. Fl. Somala 2 : 75, fig. 40 (1932)—(fide Chiov.).

Somaliland : Boundary Pillar 93, 990 m., shrub 2 m., leaves glaucous, 6 Oct., No. 4184. Vernac.—*Mala wa hared.*—Endemic.

Commiphora cuspidata Chiov. sp. nov. C. Playfairii var, benadirensis *Chiov.* Fl. Somala ii. 70 fig. 36 (1932) ; videtur species intermedia inter *C. rostratam* Engl. et *C. Playfairii* (Hook. f.) Engl., primam accedit ob fructum, secundam ob foliorum compositionem.

Frutex intricato-ramosus, ramis robustis rigidis vetustis cortice plicato-succulento cineraceo, macroblastis spinosis 1–7 cm. longis conicis basi 4 mm. diam. circ. crassis, brachyblastis 1·5–2 mm. longis usque 2·5 mm. latis, squamulosis. *Folia* 3–6-fasciculata omnino glabra, trifoliolata ; petiolus gracilis, 3–4 mm. longus, 0·3 mm. latus, supra planus, subtus semiteres ; foliola sessilia, tenuiter chartacea, sicco cinereo-viridia, supra paulo intensius viridia ; foliolum medium obovatum, 1–3 mm. longum, 0·5–1·5 mm. latum, apice rotundatum vel leviter contractum, basi e $\frac{1}{3}$ vel $\frac{1}{4}$ superiore parte sensim cuneato-attenuatum ; margines integerrimi, plani ; costa utrinque subconcolor, subtus parum elevata, supra explanata ; nervi utrinque 3–5, subtus vix prominentes, supra evanidi ; foliola lateralia minima, 0·8–5 mm. longa, 0·5–2·5 mm. lata, lanceolata vel ovato-lanceolata, utrinque subaequaliter attenuata et acutiuscula. *Inflorescentia* 1–3-flora ; pedunculus crassus, circ. 1 mm. longus, glaber ; bracteae oppositae, latissime triangulari-ovatae, subconnatae, 0·5 mm. longae, 1 mm. latae, fuscae, glabrae ; pedicelli subnulli ; alabastra obovata, glabra, 5 mm. longa, apice 2 mm. crassa. *Calyx* glaber, carnosulus, infundibuliformis, 6 mm. longus, dentibus 4 ovato-triangularibus 1–1·5 mm. longis acutis. *Petala* non visa. *Fructus* fusce subrufescens, valde compressus, ovoideus, apice rostrato-acuminatus, basi calyce 4-fido persistente, laciniis linearibus ad 6 mm. longis suffultus, 9–11 mm. longus, 5–6 mm. latus, 3 mm. spissus, rostro acuto 2–3 mm. longo ; exocarpium tenue fere

exsuccum ; endocarpium ovoideo-acutum 7·5–8 mm. longum, 4 mm. latum, 2·5–3 mm. spissum, biloculare, loculis (an semper?) inaequalibus.

Somaliland : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 840 m., shrub 2 m., fls. dull red, leaves pale green, 20 Oct., No. 4385. Vernac.—*Didin.*

C. Drake-Brockmanii Sprague in Hook. Ic. Pl. t. 3112 (1927).

Somaliland : Ali Wein Mt., long. 45° 15′ E., lat. 10° 24′ N., 450 m., steep sandstone slopes, small shrub 0·5 m., fruits purplish, Jan., No. 4818.—Endemic.

C. erythraea Engl. in DC. Monogr. Phan. 4 : 20 (1883).

Somaliland : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., tangled shrub, to 3 m., stems white, fls. yellow, 20 m., No. 4181. Duwi, long. 44° 15′ E., lat. 10° 5′ N., 840–990 m., steep rocky slopes, shrub 3 m., white stem, dominant in places, Oct., No. 4388. Vernac.—*Hagar.*

C. flaviflora Engl. Bot. Jahrb. 34 : 304 (1904).

Somaliland : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., Oct., No. 4198. Vernac.—*Rahan reb.*—Endemic.

Commiphora Gillettii Chiov. sp. nov. (§*Glabra, Integrifoliolata*).

Frutex inermis, divaricato-ramosus, ramis potius elongatis 2–13 mm. longis prope basin 2·5–3·5 mm. crassis, cortice cinereo plus minusve fusco variegato, interdum albicante ; brachyblasti 1–3 mm. longi, 1·5 mm. lati, transverse corrugati, folia fasciculata 3–4 et fructus 1 vel interdum 2 gerentes. *Folia* semper trifoliolata, glaberrima ; petiolus gracilis, 2·5–7 mm. longus, leviter compressus, utrinque convexus subtus magis, 0·3–4 mm. latus ; foliola integerrima, sessilia, linearia, medium 8–17 mm. longum 0·6–1·1 mm. latum, ex apice rotundato sensim usque ad basin angustatum ; lateralia mediano similia sed paulo breviora, 5–14 mm. longa, interdum plus minusve falcata, vix rigidula, utrinque concoloria, etiam sicco laete viridia ; costa subtus concolor, leviter prominens, supra impressa, fusca ; nervi omnino evanidi. *Pedicelli* fructiferi 2 mm. longi, tenues, glabri. *Calyx* submembranaceus, ample cupulatus vel plus minusve explanatus, basin fructus laxissime amplectens, circ. 2 mm. latus, dentibus 4 late triangularibus 0·25 mm. longis praeditus. *Fructus* non perfecte maturus ovoideus, 4·5 mm. longus, basi breviter contractus, apice breviter sed manifeste apiculatus, non compressus, 2·5–3 mm. diam., fuscus, longitudinaliter lineis 4 pallidis subtilibus aequidistantibus signatus.

Somaliland : Near Haiti tug, long. 45° 20′ E., lat. 10° 22′ N., 300 m., 2 m., very aromatic, fruits purplish, 5 Jan., No. 4817 (type in Kew Herb.).

Commiphora Gowlello Sprague l.c. t. 3109.

Somaliland : Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., 930 m., Oct., No. 4309. Boundary Pillar 99, long. 44° 39′ E., lat. 8° 47′ N., 1,140 m., shrub 1 m., fls. greenish yellow, almost sessile, aromatic, Oct., No. 4141 ; 4135. Vernac.—*Goah Tubbuk.*—Endemic.

C. lughensis Chiov. Fl. Somala 2 : 105 (1932) (fide Chiov.).

Somaliland : Wobleh, tree up to 6 m., bark white, Nov., No. 4587. Vernac.—*Hagar ad.*—Endemic.

Commiphora obovata Chiov. sp. nov. (§*Glabra, Integrifoliolata*) ; affinis *C. abyssinicae* Engl. a qua spinis subulatis gracilioribus, foliolis mediis obovatis integris, cortice cinereo-nigricante plicato-fissurato distincta.

Frutex ramis intricatis elongatis, juvenilibus glabris subulatis 2·5–3·5 cm. longis, e basi 1–1·5 mm. crassa sensim angustatis prius pruinoso-nigricantibus, demum siccando albescentibus acutissimis tenuibus tandem spinosis, folia 3–7 solitaria gerentibus, internodiis usque 17 mm. longis cylindricis ; brachyblasti hemisphaerici in ramis adultis 2–3 mm. longis et latis, interdum ad basin ramulorum elongatorum tenuium ad instar pulvinis positi ; rami senescentes cortice atro-cinereo, longitudinaliter plicatulo et minute fissurato. *Folia* omnia trifoliolata, vel interdum foliolo abortivo bifoliolata, glaberrima, in brachyblastis 3–5 fasciculata ; petiolus 1–3 mm. longus, gracilis ; foliolum medium obovatum, 4–13 mm. longum 2·5–10 mm. latum, apice ample rotundatum, integrum vel majora interdum levissime undulato-crenulata, basi cuneatum, sessile ; lateralia minima, ovata vel elliptica vel obovata, 1–2 mm. longa, 0·5–1 mm. lata, obtusa ; supra etiam sicco laete viridia, costa nervis utrinque 3–4 et venis reticulatis leviter impressis ; subtus vix pallidiora, costa elevata, nervis vix conspicuis, venis obsoletis. *Drupa* subglobosa, 9–10 mm. diam. magna, apice breviter apiculata ; endocarpium dorso leviter compressum, late convexum antice longitudinaliter angulo obtusiusculo ab apice usque ad basin carinatum ; loculi duo, dorsale angustum sterile, anticum seminiferum.

Somaliland : Boundary Pillar 93, shrub 2 m., leaves glossy, 6 Oct., No. 4185 (type in Kew Herb.). Vernac.—*Shan maleiss.*

C. ogadensis Chiov. Fl. Somala 2 : 103 (1932) (fide Chiov.).

Somaliland : Wobleh, long. 43° 17′ E., lat. 10° 15′ N., 1,020–1,440 m., bush up to 5 m., Nov., No. 4586. Vernac.—*Hagar medu.*—Also in Abyssinia.

C. Opobalsamum Engl. var. *induta* Sprague.

Somaliland : near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., lava slopes, common shrub 2 m., Oct., No. 4307. Vernac.—*Daseno.*—Endemic.

Commiphora Playfairi (Hook. f.) Engl. in Engl. & Prantl Nat. Pflanzenfam. 3, 4 : 253 (1896).

Somaliland : Boundary Pillar 99, long. 44° 39′ E., lat. 8° 47′ N., 1,140 m., shrub to 1·5 m., fls. reddish, Oct., No. 4143 ; 4145. Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., shrub 2 m., fls. reddish, Oct., No. 4160. Duwi, 1,200 m., Oct., No. 4378. Vernac.—*Golelu.*—Endemic.

C. resiniflua Martelli Fl. Bogos. 15 (1886).

Somaliland : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., shrub 2–3 m., Oct., No. 4216.

Abyssinia : Gafra Valley, long. 42° 13′ E., lat. 9° 21′ N., 1,500 m., deciduous scrub on granite slopes, small tree to 3 m., fls. dark red, Feb., No. 5068. Vernac.—*Tubbuk* (Somali) ; *Anka* (Abyss.).—Also in Eritrea.

C. rostrata Engl. in Ann. Ist. Bot. Roma 7 : 17 (1897).

SOMALILAND : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., shrub 2 m., fls. red, Oct., No. 4210. Camp 4, long. 44° 16′ E., lat. 10° N., 920 m., shrub 1 m., very aromatic, fls. dark red, Oct., No. 4352. Vernac.—*Chinow ; Ali-oi-e.*—Endemic.

C. samharensis Schweinf. in Bull. Herb. Boiss. 7, App. 2 : 290 (1899).

SOMALILAND : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., shrub 2 m., fls. deep red, Oct., No. 4165. Vernac.—*Shanmal-ais.*—Also in Eritrea.

C. Schimperi Engl. in DC. Monogr. Phan. 4 : 13 (1883).

SOMALILAND : Boundary Pillar 105, long. 44° 10′ E., lat. 8° 57′ N., 1,290 m., in shallow soil, small shrub, Oct., No. 4233.

C. Tubuk Sprague in Hook. Ic. Pl. t. 3108 (1927).

SOMALILAND : near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., 960 m., lava slopes facing south, shrub 2 m., Oct., No. 4310. Afard, long. 44° 8′ E., lat. 10° 8′ N., 1,050 m., shrub 1 m., Oct., No. 4463. Vernac.—*Ged Goah.*—Endemic.

MELIACEAE.

Trichilia Volkensii Gürke in Engl. Bot. Jahrb. 19 : Beibl. 47 : 33 (1894).

ABYSSINIA : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,340 m., on limestone, in remnants of *Podocarpus* forest, bushy tree, 4 m., fls. cream, Feb., No. 5126. Vernac.—*Tintoline.*

Ekebergia Ruppeliana A. Rich.—F.T.A. 1 : 333.

ABYSSINIA : Boesesa valley, long. 42° 18′ E., lat. 9° 29′ N., 2,010 m., on granite, in remnants of evergreen forests, tree 8 m., fls. cream, Feb., No. 5172. Vernac.—*Löl.*

Turraea Holstii Gürke in Engl. Bot. Jahrb. 19 : Beibl. 47 : 35 (1894).

ABYSSINIA : Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,130 m., in Podocarpus forest, shrub 5 m., seeds orange, Mar., No. 5410.

T. parvifolia Deflers. in Bull. Soc. Bot. Fr. 42 : 301 (1895).

SOMALILAND : Daraweina, long. 44° 10′ E., lat. 9° 43′ N., 1,110 m., bush 4 m., fls. yellow, Oct., No. 4285. Vernac.—*Domai.*

SAPINDACEAE.

Cardiospermum Corindum Linn. Sp. Pl. ed. II. 526 (1762), C. canescens *Wall.*—F.T.A. 1 : 418.

SOMALILAND : Buramo, long. 43° 12′ E., lat. 10° 1′ N., 1,200 m., in *Acacia* open wood, climber, fls. white tipped with orange, Jan., No. 4887.

C. Halicacabum Linn.—F.T.A. 1 : 417 ; F.W.T.A. 1 : 498.

SOMALILAND : Buramo, long. 43° 10′ E., lat. 10° N., 1,380 m., in *Acacia* open wood, Jan., No. 4842.

Allophylus abyssinicus (Hochst.) Radlk. in Engl. & Prantl, Nat. Pflanzenf. 3, 5 : 313 (1895).

Abyssinia : Geldid, long. 41° 48′ E., lat. 9° 15′ N., 2,280–2,400 m., on limestone in half cleared *Podocarpus* forest, tree 5 m., fls. cream, Mar., No. 5392.

A. rubrifolius Engl. Hochgebirgsfl. 892 (1892).

Somaliland : Jifa Uri, long. 43° 22′ E., lat. 9° 42′ N., 1,680 m., on gneiss kopje, shrub 2 m., fls. yellowish, Jan., No. 4836. Hargeisa, 1,410 m., Oct., No. 4257.

Dodonaea viscosa Linn.—F.T.A. 1 : 433 ; F.W.T.A. 1 : 500.

Somaliland : Buramo, long. 43° 10′ E., lat. 10° N., 1,500 m., among Acacias, shrub 2 m., fls. purplish green, Jan., No. 4857. Vernac.—*Hairimat.*

Pappea capensis (Spreng.) Eckl. & Zeyh. Enum. Pl. Afr. Austr. 1 : 53 (1834). P. Radlkoferi *Schweinf.* P. ugandensis *Bak. f.* P. fulva *Conrath.* P. Schumanniana *Schinz.*

Somaliland : Libah Hele Mt., long. 42° E., lat. 10° 20′ N., 1,200–1,800 m., in *Buxus* evergreen scrub, tree 6 m., Dec., No. 4705.

Abyssinia : Harar, long. 42° 10′ E., lat. 9° 20′ N., 1,650 m., on granite, Feb., No. 5058. Vernacs.—*Adadak* (Somali), and *Bika* (Abyss.).—Also in Eritrea.

Melianthaceae.

Bersama abyssinica Fresen.—F.T.A. 1 : 434.

Abyssinia : Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,430 m., on limestone slopes in remnants of *Podocarpus* forest, tree 4 m., fls. white, Mar., No. 5428. Vernac.—*Sombo.*

Anacardiaceae.

Rhus abyssinica Hochst. ex A. Rich.—F.T.A. 1 : 438.

Abyssinia : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,400 m., remnant of evergreen forest, 4 m., fls. greenish, Feb., No. 5204. Vernac.—*Gomo.*

R. glutinosa Hochst. ex A. Rich.—F.T.A. 1 : 438.

Abyssinia : Gafra valley, long. 42° 13′ E., lat. 9° 21′ N., 1,530 m., on granite slopes in upper deciduous scrub, shrub 2 m., Feb., No. 5073. Vernac.—*At esa.*—Also in Tanganyika Territory.

R. natalensis Bernh. ex Krauss in Flora 27 : 349 (1844).

Somaliland : Hargeisa, long. 44° E., lat. 9° 35′ N., 1,350–1,530 m., on rocky slopes, shrub 3 m., Oct., No. 4270. Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,140 m., in *Buxus* scrub, 3 m., fls. greenish, Oct., No. 4411. Libah Hele Mt., long. 43° E., lat. 10° 20′ N., 1,770 m., on fringe of Juniperus forest, shrub 2 m., Dec., No. 4707. Vernac.—*Ilka ade.*

R. retinorrhoea Steud.—F.T.A. 1 : 438.

Somaliland : Birda Mt., long. 43° E., lat. 10° 20′ N., 1,620 m., on limestone cliffs with *Buxus*, shrub 2 m., fls. cream, Nov., No. 4675.

Abyssinia : Ridge south west of Harar, long. 42° 6′ E., lat. 9° 17′ N., 1,950 m., on limestone, shrub 2 m., Mar., No. 5249. Vernac.—*Mugan* (Abyss.).

Heeria insignis O. Ktze. Rev. Gen. 1 : 152 (1891) ; F.W.T.A. 1 : 512. Rhus insignis *Del.*—F.T.A. 1 : 437.

Somaliland : Birda Mt., long. 43° E., lat. 10° 20′ N., 1,590 m., on limestone in *Buxus* scrub, small tree 3 m., Nov., No. 4674.

Abyssinia : Gobelli, long. 41° 59′ E., lat. 9° 10′ N., 1,650 m., Mar., No. 5258. Vernac.—*Wigir ad ad* (Somali).

Lannea malifolia (Chiov.) Hutch. et E. A. Bruce, comb. nov. Odina malifolia *Chiov.* Fl. Somala 133, tab. 12, fig. 1 (1929).

Somaliland : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,260 m., in *Buxus* scrub, tree 7 m., fls. greenish, Oct., No. 4421 ; long. 43° 16′ E., lat. 10° 5′ N., 1,140 m., on rock, with *Buxus*, tree 4 m., Nov., No. 4596. Goton E., long. 42° 54′ E., lat. 10° 9′ N., 1,530 m., on limestone slope with *Combretum-Grewia-Dodonaea*, tree 5 m., fls. yellowish, Nov., No. 4637. Vernacs.—*Hria eji* ; *Bero.*—Endemic.

L. Schimperi (Hochst.) Engl. in Engl. & Prantl, Pflanzenfam. Nachtr. 1 : 213 (1897).

Abyssinia : Gobelli valley, long. 41° 59′ E., lat. 9° 10′ N., 1,500 m., on granite in evergreen scrub, tree 4 m., Mar., No. 5263. Vernac.—*Dareko.*

L. triphylla Engl. in Engl. & Prantl, Pflanzenfam. Nachtr. 1 : 213 (1897).

Somaliland : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., shrub 2 m., Oct., No. 4183. Vernac.—*Lejidi.*

Pistacia falcata Becc. ex Martelli Fl. Bogos. 24 (1886).

Somaliland : Auboba, long. 43° E., 10° 6′ N., 1,620 m., on mountain slope with *Dodonaea-Acokanthera*, tree 10 m., Nov., No. 4619. Vernac.—*Hra-a-mali.*

P. Lentiscus L. var. *emarginata* Engl. in DC. Monogr. 4 : 286 (1883).

Somaliland : Libah Hele Mt., long. 43° E., lat. 10° 20′ N., 1,560–1,790 m., on limestone in *Buxus-Juniperus* scrub, tree 4 m., Dec., No. 4697. Vernac.—*Ula aso.*

Araliaceae.

Cussonia Holstii Harms ex Engl. in Abh. Preuss. Akad. Wiss. 64 (1894).

Somaliland : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,110–1,260 m., in *Buxus* scrub, tree 6 m. high, Oct., No. 4416.

Abyssinia : Gobelli, long. 41° 59′ E., lat. 9° 10′ N., 1,590 m., Mar., No. 5268. Vernac.—*Wahara gū* (Somali).

Schefflera abyssinica (Hochst.) Harms in Engl. & Prantl, Nat. Pflanzenfam. 3, 8 : 38 (1894).

Abyssinia : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,340 m., in remnants of evergreen forest, spreading tree like a walnut, 20 m. high, fls. yellow, Feb., No. 5124. Vernac.—*Mafratu.*—Also in Uganda.

Hydrocotyle asiatica Linn.—F.T.A. 3 : 6 ; F.W.T.A. 1 : 522.

ABYSSINIA : Gorla-Kolubi track, long. 41° 45′ E., lat. 9° 22′ N., 2,610 m., in grassland, fls. purplish, Mar., No. 5403.

H. monticola Hook. f.—F.W.T.A. 1 : 522.

ABYSSINIA : Geldid, long. 41° 48′ E., lat. 9° 15′ N., 2,430 m., in open marsh, fls. purple, Mar., No. 5386.

H. natans Cyr.—F.T.A. 3 : 5.

ABYSSINIA : Kolubi-Harar road, long. 41° 50′ E., lat. 9° 25′ N., 2,100 m., in pools of water and on limestone mud, fls. greenish, growing densely, Mar., No. 5462.

Pimpinella Neumannii Engl. in Sitz. Preuss. Akad. Wiss. 40 : 746 (1906), nomen.

Herba usque ad 30 cm. alta, heterophylla, basi foliorum reliquiis fibrosis induta ; caules crebre costati, pubescentes. *Folia* fere glabra, valde variabilia, pauca simplicia et ovato-elliptica, basi cordata, apice rotundata, circiter 2 cm. longa et 1 cm. lata, crenato-dentata, alia trifoliolata, foliolis folio simplici similibus, caetera pinnatipartita, segmentis linearibus subintegris ; petioli pubescentes. *Umbellae* longe pedunculatae, compositae, primariae circiter 12-radiatae, secondariae circiter 20-radiatae, ebracteatae ; pedunculi secondarii circiter 2 cm. longi, pubescentes ; pedicelli 2–3 mm. longi, pubescentes. *Flores* albi. *Calyx* obsoletus. *Petala* obovata, circiter 1 mm. longa, extra parce pubescentia. *Stamina* petalis leviter longiora. *Hypanthium* ovoideo-ellipsoideum, dense pubescens. *Styli* divergentes.

ABYSSINIA : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,730 m., on limestone in *Podocarpus-Juniperus* forest, fls. white, 3 Mar., No. 5324.

P. sinensis Benth. & Hk. f.—F.T.A. 3 : 14.

ABYSSINIA : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,700 m., in evergreen forest, fls. white, Mar., No. 5299.

Apium nodiflorum Linn.—F.T.A. 3 : 11.

ABYSSINIA : Geldid, long. 41° 48′ E., lat. 9° 15′ N., 2,430 m., in shaded marsh, fls. white, stem trailing, Mar., No. 5385.

Peucedanum fraxinifolium Hiern—F.T.A. 3 : 22 ; F.W.T.A. 1 : 523.

SOMALILAND : Duwi Pass, long. 44° 15′ E., lat. 10° 5′ N., 900 m., steep rocky slopes in gullies, tree 3 m. high, Oct., No. 4383. Vernac.—*Ged Bidawi*.

Sanicula europaea Linn.—F.T.A. 3 : 8 ; F.W.T.A. 1 : 523.

ABYSSINIA : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,580 m., on limestone, fls. white, Mar., No. 5297.

Torilis arvensis (Huds.) Link Enum. Hort. Berol. 1 : 265 (1821–2). Caucalis arvensis *Huds.* C. infesta (*Linn.*) *Spreng.*—F.T.A. 3 : 26.

ABYSSINIA : Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,700 m., on limestone near stream, fls. white, Mar., No. 5441.

Caucalis incognita Norman in Journ. Bot. 1934 : 205.

Abyssinia : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,580 m., on limestone in damp places, fls. white, fruit with reddish-brown bristles, Mar., No. 5295.

C. melanantha Steud.—F.T.A. 3 : 26 ; F.W.T.A. 1 : 523.

Abyssinia : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,820 m., on short grass, fls. dark purple, Mar., No. 5325.

Conium maculatum Linn.—F.T.A. 3 : 9.

Abyssinia : Kondudo Mt., long. 42° 20′ E., lat. 9° 27′ N., 2,520 m., on limestone slopes, fls. white, Feb., No. 5208. Vernac.—*Chof chof.*

Daucus Carota Linn.—F.T.A. 3 : 25.

Aden : 150-360 m., on lava in shady places, fls. white, Mar., No. 5500.

Ferula communis Linn.—F.T.A. 3 : 18.

Somaliland : Wobleh mt., long. 43° 17′ E., lat. 10° 15′ N., 1,620 m., open gaps among Juniper, leaves glaucous, Feb., No. 4986.

Malabaila abyssinica Boiss.—F.T.A. 3 : 24.

Abyssinia : Kondudo Mt., long. 42° 20′ E., lat. 9° 27′ N., 2,700 m., in rank herbage on N. facing limestone slope, fls. white, plant 1·6 m. high, Feb., No. 5217. Vernac.—*Mara ma chichite.*

Ericaceae.

Erica arborea Linn.—F.T.A. 3 : 483.

Abyssinia : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,820 m., limestone mtn., dominant, shrub 3 m., 3 Mar., No. 5307. Vernac.—*Wadadi.*

Ebenaceae.

Euclea Kellau Hochst.—F.T.A. 3 : 514.

Somaliland : Hargeisa, long. 44° E., lat. 9° 35′ N., 1,530 m., on rocks, shrub 1 m., Oct., No. 4272. Barataga, long. 44° 1′ E., lat. 10° 5′ N., 1,290 m., in *Buxus-Acokanthera* scrub, shrub 3 m., Oct., No. 4520.

Abyssinia : Gafra valley, long. 42° 13′ E., lat. 9° 21′ N., 1,590 m., shrub 2 m., fls. white, Feb., No. 5069. Vernac.—*Mayer* (Somali); *Dubobis ; Dudohō.*

Sapotaceae.

Sideroxylon diospyroides Baker—F.T.A. 3 : 502.

Somaliland : Barataga Mtn., long. 44° 1′ E., lat. 10° 9′ N., 1,290 m., in *Buxus-Acokanthera* scrub, fls. cream, Oct., No. 4516. Libah Hele Mtn., long. 43° E., lat. 10° 20′ N., 1,410 m., spreading tree 5 m., fls. brownish, Dec., No. 4701. Dobo Pass, long. 43° 15′ E., lat. 10° 15′ N., 1,140 m., limestone gorge, tree 4 m., fls. cream, Feb., No. 4960. Vernac.—*Berde yer ; Hamesh.*

Sideroxylon Gillettii Hutch. et E. A. Bruce, sp. nov., affinis *S. Oxyacanthae* Baill., sed foliis spatulato-obovatis nervis lateralibus paucioribus, floribus subsessilibus staminodiis caudato-apiculatis differt.

Arbor parva, ad 6 m. alta ; rami mox glabri; ramuli hornotini cinereo-puberuli, interdum apice spinosi. *Folia* breviter petiolata, spatulato-obovata, apice rotundata, basi angustata, 2·5–3·5 cm. longa, 1–1·5 cm. lata, coriacea, infra glauco-viridia, glabra, nervis indistinctis. *Flores* subsessiles, in axillis foliorum glomerati. *Calyx* profunde lobatus ; lobi ovati, apice subacuti, 1·5 mm. longi, adpresse pubescentes. *Corollae tubus* late campanulatus, circiter 1 mm. longus, fauce 2 mm. diametro, glaber ; lobi 5, ovati, apice acuti, 1·2 mm. longi, glabri. *Stamina* basi corollae loborum inserta, filamentis patulis circiter 2 mm. longis, antheris parvis oblongis 0·5 mm. longis. *Staminodia* ovato-triangularia, circiter 0·6 mm. longa (apice excluso), apice longe caudata (0·5 mm.) et lateraliter 2-dentata. *Ovarium* subglobosum, dense hirsutum, 1 mm. longum, stylo 3 mm. longo basi excepta glabro.

Somaliland : Auboba, 1,740 m., 21 Sept., No. 4622. Auboba, long. 43° E., lat. 10° 6′ N., 1,710–1,830 m., on limestone slopes with *Acokanthera*, *Olea*, *Combretum* and *Dodonaea*, tree 6 m., fls. cream, 21 Nov., No. 4624. Rarele Mt., near Buramo, long. 43° 15′ E., lat. 10° N., 1,740 m., on gneiss slopes, small tree 4 m., fls. dull, 29 Dec., No. 4733 (type in Kew Herb.). Vernac.—*She.*

Sideroxylon Oxyacantha Baill. in Bull. Soc. Linn. Paris 943 (1891).

Abyssinia : Kondudo Mt., long. 42° 18′ E., lat. 9° 27′ N., 2,100 m., in *Juniperus* forest, tree 4 m., fls. white, Feb., No. 5107. Vernac.—*Gombolelea.*

Mimusops Kummel Hochst.—F.T.A. 3 : 508.

Somaliland : Biju Suldan, long. 43° E., lat. 10° 20′ N., 980–1,350 m., limestone slopes, tree 10 m., Dec., No. 4690.

Abyssinia : Gafra valley, long. 42° 13′ E., lat. 9° 21′ N., 1,500 m., tree 30 m., fls. white, Feb., No. 5242. Vernac.—*Anjel* (Somali) ; *Naga Kadadi* (Abyss.).

Myrsinaceae.

Maesa lanceolata Forssk.—F.T.A. 3 : 492 ; F.W.T.A. 2 : 16.

Abyssinia : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,100 m., tree 6 m., fls. cream, Feb., No. 5128. Vernac.—*Abaiyi.*

Myrsine africana Linn.—F.T.A. 3 : 493.

Somaliland : Jifa meidir, long. 43° 15′ E., lat. 9° 43′ N., 1,740 m., 60 cm., fls. dark red, Jan., No. 4867.

Abyssinia : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,400 m., 1 m., Feb., No. 5143. Vernac.—*Gujamo.*

Loganiaceae.

Buddleja polystachya Fresen.—F.T.A. 4, 1 : 515.

Abyssinia : Gara Mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,430 m., small tree, 4 m., fls. orange, Mar., No. 5283.

Lachnopylis congesta (R. Br.) C. A. Smith in Kew Bull. 1930 : 17. Nuxia congesta *R. Br.*—F.T.A. 4, 1 : 512.

Abyssinia : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,460 m., tree 12 m., fls. white, Feb., No. 5156.

L. oppositifolia Hochst. in Flora 26 : 77 (1843). Nuxia dentata *R. Br.*—F.T.A. 4, 1 : 513.

Somaliland : Bija suldan, long. 43° E., lat. 10° 20′ N., 1,110 m., willow-like tree up to 6 m., fls. white, Dec., No. 4693. Vernac.—*Defidid*. Wood used for making milk-vessels.

Oleaceae.

Olea chrysophylla Lamk.—F.T.A. 4, 1 : 18. O. somalensis *Baker*—F.T.A. 4, 1 : 18.

Somaliland : Simodi, long. 43° 30′ E., lat. 10° 5′ N., 1,260–1,740 m., common, small tree 5 m., Nov., No. 4566. Berdale Mt., long. 43° E., lat. 10° 20′ N., 1,380–1,710 m., on schist, tree 8 m., Dec., No. 4683.

Abyssinia : Sarerta Mt., long. 42° 19′ E., lat. 9° 30′ N., 2,400 m., tree 6 m., Feb., No. 5179. Vernac.—*Wigir* (Somali) ; *Wera* (Abyss.).

O. Hochstetteri Baker—F.T.A. 4, 1 : 17.

Abyssinia : Gara Mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,730 m., limestone, tree 20 m., fls. white, Mar., No. 5358.

Jasminum abyssinicum R. Br.—F.T.A. 4, 1 : 11.

Abyssinia : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,550 m., fls. white, fragrant, Feb., No. 5151. Gara Mulata Mt., 2,790 m., climber, fls. white, Mar., No. 5326.

J. floribundum R. Br.—F.T.A. 4, 1 : 13.

Somaliland : Hargeisa, long. 44° E., lat. 9° 35′ N., 1,530 m., on rocks, shrub 2 m., fls. white, red outside, Oct., No. 4271.

Abyssinia : Harar, long. 42° 10′ E., lat. 9° 20′ N., 1,650 m., climber, Feb., No. 5050. Vernac.—*Bilu*.

J. mauritianum Boj.—F.T.A. 4, 1 : 10.

Somaliland : Satoa, long. 43° 5′ E., lat. 9° 59′ N., 1,500 m., on steep slopes, fls. white, very fragrant, Nov., No. 4616. Buramo, Dumuk, long. 43° 12′ E., lat. 10° 1′ N., 1,170 m., fls. white, Jan., No. 4889. Vernac.—*Da-ali*.

J. Steudneri Schweinf. ex Baker—F.T.A. 4, 1 : 12.

Somaliland : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,140 m., scandent shrub, fls. white, red outside, sweetly scented at night, Oct., No. 4408. Vernac.—*Dumbar*.

Apocynaceae.

Adenium obesum (Forssk.) Roem. & Sch. Syst. 4 : 411 (1819). A. coetaneum *Stapf*—F.T.A. 4, 1 : 227.

Aden : 210 m., on lava, 1 m., fls. rose, Mar., No. 5508.

A. somalense Balf. f.—F.T.A. 4, 1 : 228.

Somaliland : long. 44° 18′ E., lat. 9° 57′ N., 810 m., small shrub, 0·3 m., fls. bright red, Oct., No. 4343.

var. *crispum* Chiov.

Somaliland : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., shrub 0·5 m., fls. bright red, Oct., No. 4149. Vernac.—*Warrab Karon.*

Acokanthera Schimperi Schweinf.—F.T.A. 4, 1 : 93.

Somaliland : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,050–1,200 m., small tree 5 m., arrow poison, Oct., No. 4380. Auboba, long. 43° E., lat. 10° 6′ N., 1,590–1,800 m., on limestone slopes, shrub 5 m., fls. pink and white, sweet scented, Nov., No. 4621.

Abyssinia : Gobelli, long. 41° 59′ E., lat. 9° 10′ N., 1,590 m., on granite slopes, tree 4 m., fls. pinkish, Mar., No. 5265. Vernac.—*Waba* (Somali) ; *Gararo* (Abyss.).

Carissa edulis Vahl—F.T.A. 4, 1 : 89.

Somaliland : Wobleh, long. 43° 17′ E., lat. 10° 15′ N., 1,740 m., on mountain top, weak shrub, fr. red, Nov., No. 4590.

Abyssinia : Harar, long. 42° 6′ E., lat. 9° 18′ N., 1,950 m., shrub 2 m., fls. pink and white, Feb., No. 5003.

var. *tomentosa* Stapf.

Somaliland : Wobleh, No. 4591.

Abyssinia : Harar, No. 5044. Vernac.—*Degwud* (Somali) ; *Agamsa ; Agam* (Abyss.).

Asclepiadaceae.

Periploca aphylla Decne—F.T.A. 4, 1 : 257.

Somaliland : Libah Hele Mt., long. 43° E., lat. 10° 20′ N., 1,500 m., Dec., No. 4698. Vernac.—*Aan orle.*

P. ephedriformis Schweinf. ex Deflers in Mém. Inst. Egypt. 3 : 256 (1896).

Somaliland : Kabri Bahr, long. 43° 44′ E., lat. 10° 20′ N., 750–900 m., shrub 3 m., fls. yellowish green, Nov., No. 4548.

Abyssinia : Yuka, long. 41° 40′ E., lat. 9° 27′ N., 1,680 m., 1 m., fls. yellowish green, Mar., No. 5456. Vernac.—*Gesa rioli ; Aan orle* (Somali).—Also in Arabia.

P. linearifolia Dill. & Rich.—F.T.A. 4, 1 : 257.

Abyssinia : Geldid, long. 41° 48′ E., lat. 9° 15′ N., 2,280 m., climber, fls. pale yellow, Mar., No. 5391.

Cryptolepis Gillettii Hutch. et E. A. Bruce, sp. nov. affinis *C. deciduae* N.E. Br., sed foliis et pedicellis puberulis, coronae lobis brevioribus differt.

Suffrutex 0·5 m. altus, intricate ramosus, ramis cinereis adultis 5 mm. diametro. *Folia* in ramulis abbreviatis disposita, subsessilia, lineari-oblanceolata, obtuse mucronata, 2–2·5 cm. longa, circiter 3 mm. lata, utrinque minutissime puberula, nervis inconspicuis. *Flores* solitarii ; pedicelli 3–4 mm. longi, puberuli, basin versus bracteolis linearibus instructi. *Calycis lobi* lineari-lanceolati, subacuti, 2 mm. longi, puberuli. *Corollae tubus* 2 mm. longus ; lobi

lineares, 7 mm. longi, induplicati. *Coronae lobi* subulati. *Antherae* 1 mm. longae, acuminatae. *Folliculi* lineari-falcati, 6 cm. longi, glabri. *Semina* late linearia, 7 mm. longa, minute tuberculata.

SOMALILAND : Dubar, long. 45° 5′ E., lat. 10° 20′ N., 300 m., 0·5 m. high, fls. greenish yellow, 2 Jan., No. 4773 (type in Kew Herb.). Vernac.—*Ula as.*

Secamone punctulata Decne—F.T.A. 4, 1 : 284.

SOMALILAND : near Wabwanak Peak, long. 43° E., lat. 10° 20′ N., 1,560 m., climber, fls. orange, Dec., No. 4711.

ABYSSINIA : Gobelli, long. 41° 59′ E., lat. 9° 10′ N., 1,590 m., fls. yellow, Mar., No. 5267. Vernac.—*Gesariad* (Somali).

Cynanchum defoliascens K. Schum.—F.T.A. 4 : 400.

SOMALILAND : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., fls. greenish, Oct., No. 4187.—Endemic.

Cynanchum falcatum Hutch. et E. A. Bruce, sp. nov., affinis *C. hastifolio* N.E. Br., sed foliis basi haud hastatis pubescentibus linearibus falcatis differt.

Frutex scandens ; caules graciles, pubescentes. *Folia* linearia, falcata, basi inaequaliter truncata vel rotundata, apice subacuta, 2–3·5 cm. longa, 2–3 mm. lata, utrinque crispato-pubescentia, costa media utrinque prominente ; petioli 0·5–1 cm. longi, pubescentes. *Umbellae* subsessiles, 5–6-florae ; pedicelli 3–4 mm. longi, parce puberuli. *Calycis lobi* ovato-triangulares, acuti, 1 mm. longi, puberuli. *Corollae lobi* oblongo-lanceolati, subacuti, 2·5 mm. longi, 1·5 mm. lati ; tubus 1·5 mm. longus. *Corona* cupularis, 1·5–2 mm. alta, lobis latissimis circiter 2 mm. latis apice breviter cuspidatis. *Columna staminalis* corona brevior. *Antherarum appendices* membranaceæ, ovato-orbiculares, 0·8 mm. longæ. *Stylus* conicus, appendicibus antherarum subaequalis.

SOMALILAND : Boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,290 m., fls. greenish-yellow, 4 Oct., No. 4114 (type in Kew Herb.). Vernac.—*Hayab* ; *Gessariad.*

C. hastifolium N.E. Br.—F.T.A. 4, 1 : 397.

SOMALILAND : Dobo Pass, long. 43° 15′ E., lat. 10° 15′ N., 1,200 m., fls. green and white, Feb., No. 4952.

C. sarcostemmatoides K. Sch.—F.T.A. 4, 1 : 399.

SOMALILAND : Hargeisa, 1,290 m., fls. cream, Sept., No. 3939. Vernac.—*Debina Dir.*

C. somaliense N.E. Br.—F.T.A. 4, 1 : 398.

SOMALILAND : Hargeisa, 1,290 m., suffruticose, fls. dull yellow, Sept., No. 3977. Boundary Pillar 93, No. 4173. Vernac.—*Uneho.*—Endemic.

C. validum N.E. Br.—F.T.A. 4, 1 : 398.

SOMALILAND : Libah Hele Range, long. 43° E., lat. 10° 20′ N., 1,200 m., climbing with grey juicy stems, Dec., No. 4704. Jifa Meidir, long. 43° 15′ E., lat. 9° 43′ N., 1,710 m., fls. yellow with dark red at base of corona lobes, Jan., No. 4863. Vernac.—*Minsar.*

Pentatropis spiralis (Forssk.) Decne in Ann. Sci. Nat. Ser. 2, 9 : 327 (1838). P. cynanchoides *R. Br.*—F.A.T. 4, 1 : 380.

Somaliland : Hargeisa, fls. yellow, Sept., No. 4050. Biyu Arnot, long. 42° 42′ E., lat. 10° 32′ N., 840 m., climber, fls. cream, Nov., No. 4661. Vernac.—*Hayab.*

Pergularia Daemia (Forssk.) Chiov. Result. Sci. Miss. Stefan. Paoli Somal. Ital. 1 : 115 (1916). Daemia extensa *R. Br.*—F.T.A. 4, 1 : 387.

Somaliland : Hargeisa, 1,290 m., climbing, fls. green and cream, Sept., No. 3986.

var. *macrantha* Chiov.

Somaliland : Boundary Pillar 99, long. 44° 39′ E., lat. 8° 47′ N., 1,140 m., Oct., No. 4146. Vernac.—*Assuro.*

P. tomentosa Linn. Mant. 1 : 53 (1767). Daemia cordata *R. Br.*—F.T.A. 4, 1 : 386.

Somaliland : Elmis, long. 44° 14′ E., lat. 10° 22′ N., 480 m., fls. greenish yellow, tinged with red, Oct., No. 4500.

Kanahia laniflora R. Br.—F.T.A. 4, 1 : 296.

Abyssinia : Gafra Valley, long. 42° 13′ E., lat. 9° 21′ N., 1,500 m., 0·8 m., fls. white, Feb., No. 5237.

Pentarrhinum insipidum E. Mey.—F.T.A. 4, 1 : 378.

Somaliland : Hargeisa, 1,290 m., creeper, fls. cream, Sept., No. 3921. Vernac.—*Haiyab ; Uneho.*

Steinheilia radians (Forssk.) Decne in Ann. Sci. Nat. Ser. 2, 9 : 339, t. 12 (1838).

Somaliland : Berbera, corolla-tube brownish green, limb bright yellow, Jan., No. 4755. Vernac.—*Subka.*—Also in Arabia.

Glossonema Boveanum Decne—F.T.A. 4, 1 : 292.

Somaliland : Berbera, 30 m., plant whitish, fls. white and brown, Jan., No. 4762. Vernac.—*Subka.*

Glossonema hispidum Hutch. et E. A. Bruce, sp. nov. *G. Thruppii* Oliv. valde affinis sed foliis angustioribus et minoribus, pedunculo nullo (floribus fasciculatis) differt.

Caules prope basin ramosi, straminei, usque ad 15 cm. longi, hispidi. *Folia* sessilia, oblongo-oblanceolata vel oblanceolata, apice rotundata et apiculata, basi angustata, 1·5–3 cm. longa, usque ad 1 cm. lata, margine hispido-ciliata, utrinque parce hispida, nervis inconspicuis. *Flores* pallide flavi, fasciculati, fasciculis extra-axillaribus 3–4-floris ; pedicelli 3 mm. longi, hispidi ; bracteae subulatae. *Calycis lobi* lineari-subulati, 2·5 mm. longi, hispidi. *Corolla* late patelliformis, glabra, limbo circiter 7 mm. diametro, lobis ovato-triangularibus subobtusis 2·5 mm. longis. *Coronae lobi* ovato-elliptici, 2 mm. longi, apice emarginati et cucullati, dimidio superiore liberi, glabri. *Columna staminalis* 0·5 mm. longa. *Stylus* apice disciformis.

Somaliland : Boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,260 m., fls. dull yellow, 29 Sept., No. 4081 (type in Kew Herb.). Vernac.—*Subka.*

G. Revoilii Franch.—F.T.A. 4, 1 : 292.

Somaliland : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., fls. yellow, Oct., No. 4218. Dobo Pass, long. 43° 15′ E., lat. 10° 15′ N., fls. yellow, with reddish brown centre, Feb., No. 4968. Vernac.—*Chumka ; Subka.*

Calotropis procera Ait.—F.T.A. 4, 1 : 294.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,260 m., shrub 3 m., fls. cream and purple, Sept., No. 4067. Vernac.—*Boah ad.*

Asclepias flavida N.E. Br.—F.T.A. 4, 1 : 331.

Somaliland : Hargeisa, fls. yellow with purple centre, Sept., No. 3980 ; 4047. Vernac.—*Dufeyo.*

A. macrantha Hochst.—F.T.A. 4, 1 : 340.

Abyssinia : Haramaia, long. 42° E., lat. 9° 24′ N., 1,980 m., fls. red, tips of corona lobes deep yellow, Mar., No. 5468. Vernac.—*Harati-u.*

Sarcostemma viminale R. Br.—F.T.A. 4, 1 : 384.

Somaliland : Hargeisa, climber, Sept., No. 4072. Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., fls. cream, Oct., No. 4180 ; 4204. Marmar Range, long. 42° 47′ E., lat. 10° 29′ N., 1,530 m., Nov., No. 4658.

Abyssinia : Yuka, long. 41° 40′ E., lat. 9° 27′ N., 1,680 m., Mar., No. 5455. Vernac.—*Hangeyu* (Somali).

Marsdenia Schimperi Decne—F.T.A. 4, 1 : 419.

Somaliland : Buramo, long. 43° 10′ E., lat. 10° N., 1,380 m., fls. white, fr. green, Jan., No. 4843.

Ceropegia De-Vecchii Chiov. Fl. Somala 2 : 301 (1932).

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., climber, fls. dark red, mottled, Sept., No. 4073. Vernac.—*Marora gel.*—Endemic.

Ceropegia nuda Hutch. et E. A. Bruce, sp. nov. affinis *C. subaphyllae* K. Schum. sed corollae lobis linearibus, coronae lobis haud ciliatis differt.

Tuber fusiforme, edule, 7 cm. longum, 1·5 cm. diametro. Caules sarmentosi, succulenti, glauco-cinerei, circiter 3 mm. diametro, subaphylli. *Folia* rarissima, sessilia, lineari-lanceolata, 0·8 cm. longa, subacuta, glabra. *Flores* solitarii vel subsolitarii, atrorubri et cinerei ; pedicelli 6 mm. longi, glabri. *Calycis lobi* subulato-lineares, acuti, 5 mm. longi, glabri. *Corolla* circiter 4 cm. longa, extra scaberula ; tubus 2·5 cm. longus, infra medium leviter contractus, 2·5–3 mm. diametro, inferne intra pilis paucis instructus ; lobi lineares, apice cohaerentes, inferne scaberuli, superne glabri, 1·7 cm. longi. *Coronae lobi* lineares, inaequales, glabri ; interiores 2 mm. longi ; exteriores 1·2 mm. longi. *Carpella* immatura glabra.

Somaliland : Afard, long. 44° 8′ E., lat. 10° 10′ N., 480 m., succulent, climbing, fls. dark red and grey, 27 Oct., No. 4484 (type in Kew Herb.). Vernac.—*Maroro ari.*

C. somalensis Chiov. Result. Sci. Miss. Stefan.-Paoli Somal. Ital. 1 : 116 (1916).

SOMALILAND : Boundary Pillar 93, fls. greenish cream flecked with dark red, Oct., No. 4212. Endemic.

C. subaphylla K. Schum.—F.T.A. 4, 1 : 621.

SOMALILAND : Boundary, long. 45° 9′ E., lat. 8° 37′ N., 990 m., climbing, fls. green, Oct., No. 4190. Vernac.—*Maroro arri*.—Endemic.

Leptadenia heterophylla Decne.—F.T.A. 4, 1 : 431.

SOMALILAND : Near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., 930 m., fls. white, Oct., No. 4330.

L. Spartum Wight—F.T.A. 4, 1 : 432.

SOMALILAND : Afard, long. 44° 8′ E., lat. 10° 10′ N., 510 m., shrub 2 m., fls. yellow, fragrant, Oct., No. 4438. Vernac.—*Moroh*.

Caralluma Dicapuae Chiov. in White & Sloane The Stapelieae ed. 2, 1 : 186 (1937).

SOMALILAND : Hargeisa, long. 44° E., lat. 9° 33′ N., 1,290 m., fls. greenish-brown, eaten by Somalis, Sept., No. 3993. Vernac.—*Fera Hunshu*.—Also in Eritrea.

C. Edithae N.E. Br.—F.T.A. 4, 1 : 481.

SOMALILAND : Jalelo, long. 44° 14′ E., lat. 9° 45′ N., 1,080 m., 0·2 m., fls. dark red, Oct., No. 4289. Vernac.—*Udab tis*.—Endemic.

C. priogonium K. Schum. in Engl. Bot. Jahrb. 34 : 327 (1905).

SOMALILAND : Hargeisa, 1,380 m., fls. very dark red, Oct., No. 4248. Vernac.—*Gōra ātu*.

C. retrospiciens N.E. Br.—F.T.A. 4, 1 : 480.

SOMALILAND : Weranwis Valley, long. 43° 50′ E., lat. 10° 15′ N., 600 m., 0·6 m., fls. red-brown, Nov., No. 4533. Vernac.—*Udab tis*.

C. socotrana (Balf. f.) N.E. Br. in Gard. Chron. 12 : 370 (1892).

SOMALILAND : Buramo, No. 4840. Vernac. *Gōra ātu*.—Also in Socotra.

C. speciosa N.E. Br.—F.T.A. 4, 1 : 479.

SOMALILAND : Hargeisa, 1,440 m., fls. dark red, foetid smell, visited by flies, Sept., No. 4056. Vernac.—*Udab tis*.

Echidnopsis somalensis N.E. Br.—F.T.A. 4, 1 : 477.

SOMALILAND : Simodi, long. 43° 30′ E., lat. 10° 5′ N., 1,200–1,740m., creeping, succulent stems, fls. dark red, Nov., No. 4570. Vernac.—*Had uli*.—Endemic.

RUBIACEAE.

Gardenia lutea Fres.—Stapf & Hutch. in Journ. Linn. Soc. 38 : 425 (1909).

ABYSSINIA : Gafra valley, long. 42° 13′ E., lat. 9° 21′ N., 1,500 m., tree 5 m., fls. white turning yellow, Feb., No. 5244.

Tarenna graveolens (S. Moore) Bremek. in Fedde Repert 37 : 193 (1934).

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 35′ N., 1,350 m., among rocks, shrub 2 m., fls. cream, Sept., No. 4035 ; near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., 960 m., on lava slopes, shrub 2 m., sweetly scented, Oct., No. 4312. Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,200 m., in *Buxus-Acokanthera* scrub, tree 5 m., Oct., No. 4381. Vernac.—*Aino maye-i ; barko*.

Galiniera coffeoides Del.—F.T.A. 3 : 114.

Abyssinia : Slopes of Sarerta Mt., long. 42° 19′ E., lat. 9° 30′ N., 2,400 m., on limestone in evergreen forest, bushy tree 4 m., fls. pale lilac, Feb., No. 5193. Vernac.—*Sarbandai*.

Pavetta abyssinica Fresen.—F.T.A. 3 : 173.

Abyssinia : Harar, long. 42° 19′ E., lat. 9° 28′ N., 2,400 m., shrub 2 m., fls. white, fragrant, Feb., No. 5147.

P. Hochstetteri Bremek. in Fedde Repert. 37 : 182 (1934).

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., shrub, 2 m., fls. greenish cream, Sept., No. 3987a. Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,140 m., in *Buxus* scrub, shrub 3 m., fls. rich yellow, fragrant, Oct., No. 4409.

Abyssinia : Gafra valley, long. 42° 13′ E., lat. 9° 21′ N., 1,500 m., on granite, bush 2 m., fls. yellow, Feb., No. 5245. Vernac.—*Aino maye-i* (Somali).

Pavetta venenata Hutch. et E. A. Bruce, sp. nov. affinis *P. subcanae* Hiern sed foliis minutissime papilloso-puberulis, corolla extra glabra differt.

Fruticulus usque ad 0·5 m. altus, cortice maturo pallide cinereo ; ramuli hornotini minutissime puberuli. *Folia* oblanceolata, apice obtusa, basi acutissima, 4-5 cm. longa, 1-1·5 cm. lata, glauco-viridia, infra pallidiora et minutissime papilloso-puberula ; nervi laterales utrinsecus circiter 5-7, obscuri ; petioli alati, usque ad 0·5 cm. longi, puberuli ; stipulae basi late triangulares, subulato-acuminatae, usque ad 4 mm. longae, puberulae. *Cymae* terminales, subsessiles, pauciflorae ; bracteae parvae, subulatae ; pedicelli 2-3 mm. longi, puberuli. *Receptaculum* campanulatum, 1·5 mm. longum, puberulum. *Calycis tubus* 1 mm. longus, minute denticulatus. *Corollae tubus* 2-2·3 cm. longus, sicco 1·25 mm. diametro, glaber ; lobi oblongo-obovati, 6 mm. longi. *Antherae* partim exsertae, 5 mm. longae. *Stylus* longe exsertus, glaber, stigmate clavato. *Fructus* sicco niger, globosus, nitidus, minutissime puberulus.

Somaliland : Jalelo, long. 44° 14′ E., lat. 9° 45′ N., 1,080 m., amongst archaean schist rocks, shrub to ½ m. high. 16 Oct., No. 4290 (type in Kew Herb.). Vernac.—*Rogumba*. Poisonous to stock.

This has also been collected by Mr. E. F. Peck on the Mirso Ridge, about 15 miles east of Sheikh, and with the same vernacular name.

Canthium bogosensis (Mart.) Hutch. & E. A. Bruce, comb. nov. Plectronia bogosensis *Mart.* Fl. Bogos. 42 (1886).

Somaliland : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,140 m., in *Buxus* scrub, shrub 3 m., Oct., No. 4405. Vernac.—*Gorurgi*.

Vangueria apiculata K. Schum. in Engl. Pflanzenw. Ost. Afr. C : 385 (1895).

Abyssinia : Harar, No. 5060.

Pentas Schimperiana (A. Rich.) Vatke—F.T.A. 3 : 45.

Abyssinia : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,790 m., 1 m., fls. white, Mar., No. 5327.

Oldenlandia monanthos (Hochst.) Hiern—F.T.A. 3 : 60.

Abyssinia : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,190 m., prostrate, fls. pink, Feb., No. 5113.

O. rotata Baker in Kew Bull. 1895 : 216.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 34′ N., 1,350 m., fls. white, opening in evening, Sept., No. 4023. Afard, long. 44° 8′ E., lat. 10° 10′ N., 540 m., on schist slopes, fls. cream, Oct. No. 4461. Vernac.—*Burkwa allele.*—Endemic.

O. Schimperi T. Anders.—F.T.A. 3 : 55.

Somaliland : Kabalgabat Pass, long. 43° E., lat. 10° 20′ N., 990 m., on sand, corolla-limb white, tube brownish, Dec., No. 4688. Aden : 210 m., lava slopes, Mar., No. 5487. Vernac.—*Adar.*

Pentanopsis fragrans Rendle in Journ. Bot. 1898 : 29.

Somaliland : Afard, long. 44° 8′ E., lat. 10° 10′ N., 540 m., climbing, fls. cream, Oct., No. 4454. Dubar, long. 45° 5′ N., lat. 10° 20′ E., 360 m., fls. white, handsome, Jan., No. 4774.

Anthospermum muriculatum Hochst. ex A. Rich.—F.T.A. 3 : 229.

Abyssinia : slopes of Sarerta Mt., long. 42° 19′ E., lat. 9° 30′ N., 2,400 m., in open grass, fls. greenish yellow, Feb., No. 5188.

Rubia discolor Turcz.—F.T.A. 3 : 244.

Abyssinia : Harar, long. 42° 6′ E., lat. 9° 18′ N., 1,890 m., on limestone, climbing, fls. greenish, Feb., No. 5005.

Galium Aparine Linn.—F.T.A. 3 : 245.

Somaliland : Sigib Mt., long. 43° 11′ E., lat. 10° 19′ N., 1,560 m., Feb., No. 4998.

G. hamatum Hochst. ex A. Rich. Tent. Fl. Abyss. 1 : 345 (1847).

Abyssinia : Kondudo Mt., long. 42° 20′ E., lat. 9° 27′ N., 2,640 m., on limestone slopes, rough herb, fls. greenish, Feb., No. 5214. Vernac.—*Lalesa.*—Endemic.

G. spurium Linn.—F.W.T.A. 2 : 137.

Abyssinia : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,280 m., by stream, fls. white, Feb., No. 5200.

Dipsacaceae.

Pterocephalus frutescens Hochst. ex A. Rich. Fl. Abyss. 1 : 369 (1847). Scabiosa frutescens *Hiern*—F.T.A. 3 : 252.

Abyssinia : Mulkajibri, long. 42° 16′ E., lat. 9° 24′ N., 1,770 m., evergreen scrub formation, fls. pale pink, Feb., No. 5091. Vernac.—*Boko ta Hila.*

Compositae.

Galinsoga parviflora Cav. Ic. 3 : 41, t. 281 (1795).—F.W.T.A. 2 : 141.

Abyssinia : Harar, long. 42° 6′ E., lat. 9° 18′ N., 1,890 m., waste places, Feb., No. 5019.

Guizotia Schimperi Sch. Bip.—F.T.A. 3 : 385.

Abyssinia : Gala Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,250 m., Feb., No. 5121. Kondudo Mt., long. 42° 20′ E., lat. 9° 27′ N., 2,430 m., fls. yellow, Feb., No. 5229.—Also in Eritrea.

Coreopsis macrantha Sch. Bip.—F.T.A. 3 : 391.

ABYSSINIA : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,700 m., fls. yellow, Mar., No. 5301.—Endemic.

Bidens pilosa Linn.—F.T.A. 3 : 392 ; F.W.T.A. 2 : 143.

ABYSSINIA : Harar, long. 42° 6′ E., lat. 9° 18′ N., 1,860 m., on limestone, fls. yellow, Feb., No. 5002. Vernac.—*Jugogid.*

Wedelia abyssinica Vatke—F.T.A. 3 : 377.

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., herb 1 m., fls. yellow, Sept., No. 3920.

Eclipta alba (Linn.) Hassk.—F.T.A. 3 : 373 ; F.W.T.A. 2 : 146.

SOMALILAND : Buramo, long. 43° 10′ E., lat. 10° N., 1,260 m., herb 20 cm., fls. white, Jan., No. 4875.

Spilanthes Acmella Linn.—F.T.A. 3 : 384 ; F.W.T.A. 2 : 147.

ABYSSINIA : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,280 m., prostrate, fls. yellow, Feb., No. 5197.

Siegesbeckia abyssinica Oliv. & Hiern—F.T.A. 3 : 372.

ABYSSINIA : Geldid, long. 41° 48′ E., lat. 9° 15′ N., 2,430 m., herb 1 m., fls. yellow, Mar., No. 5381.

Emilia sagittata DC.—F.T.A. 3 : 405 ; F.W.T.A. 2 : 149.

ABYSSINIA : Harar, long. 42° 10′ E., lat. 9° 20′ N., 1,650 m., fls. purple, heads drooping, Feb., No. 5066.

Notonia coccinea Oliv. & Hiern—F.T.A. 3 : 407.

ABYSSINIA : Jijiga-Harrar road, long. 42° 15′ E., lat. 9° 15′ N., 1,500 m., subsucculent, fls. scarlet, Feb , No. 5000.

Cineraria abyssinica Sch. Bip.—F.T.A. 3 : 404.

ABYSSINIA : Harar, long. 42° 20′ E., lat. 9° 27′ N., 2,700 m., fls. yellow, Feb., No. 5210.

C. Schimperi Sch. Bip.—F.T.A. 3 : 404.

ABYSSINIA : Harar, 1,890 m., fls. yellow, Feb., No. 5026.

Senecio gigas Vatke—F.T.A. 3 : 418.

ABYSSINIA : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,730 m., on limestone slopes, 2·5 m., fls. orange, Mar., No. 5359.—Endemic.

S. longiflorus (DC.) Oliv. & Hiern—F.T.A. 3 : 421. Kleinia longiflora *DC.*

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,350 m., on stony ground, stem succulent, fls. yellow, Oct., No. 4242. Ridge south east of Auboba, long. 43° 5′ E., lat. 9° 59′ N., on gneiss rocks, 1 m., fls. yellow, Nov., No. 4609.

Var. *violacea* (A. Berg.) Hutch. & E. A. Bruce, var. comb. nov. Kleinia violacea *A. Berg.* Senecio kleinioides (*Sch. Bip.*) *Oliv. & Hiern.*

Ridge south east of Auboba, fls. purple, No. 4610. Vernac.—*Godor ; wirib.*

S. myriocephalus Sch. Bip.—F.T.A. 3 : 417.

ABYSSINIA : Galla Pass, long. 42° 19′ E., 9° 28′ N., 2,400 m., in rank herbage up to *Podocarpus* forest, 1 m., fls. yellow, Feb., No. 5145. Vernac.—*Gawe.*—Endemic.

S. nandensis S. Moore in Journ. Linn. Soc. 35 : 360 (1902).

ABYSSINIA : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,520 m., climber, fls. cream, stem subsucculent, Feb., No. 5150.

S. pendulus (Forssk.) Sch. Bip. in Flora 28 : 500 (1845).

SOMALILAND : Hargeisa, long. 44° E., lat. 9° 35′ N., 1,410 m., sandy soil, succulent, fls. scarlet, Oct., No. 4267.—Also in Arabia and Abyssinia.

S. Schimperi Sch. Bip.—F.T.A. 3 : 412.

ABYSSINIA : Harar, long. 42° 10′ E., lat. 9° 20′ N., 1,650 m., fls. yellow, Feb., No. 5048.—Also in Eritrea and Arabia.

S. subscandens Hochst. ex A. Rich.—F.T.A. 3 : 421.

SOMALILAND : Simodi, long. 43° 30′ E., lat. 10° 5′ N., 1,320 m., in *Buxus-Acokanthera* scrub, climber, fls. yellow, Nov., No. 4567. Vernac.—*Dalol Daiyer.*

Euryops pinifolius A. Rich.—F.T.A. 3 : 423.

SOMALILAND : Simodi, long. 43° 30′ E., lat. 10° 5′ N., 1,740 m., among rocks near Juniperus, 1·5 m., fls. yellow, Nov., No. 4577.

Tripteris Vaillantii Decne.—F.T.A. 3 : 424.

SOMALILAND : Jifa Uri, long. 43° 22′ E., lat. 9° 42′ N., 1,680 m., on gneiss kopje, 40 cm., fls. yellow, very aromatic, Jan., No. 4832.

ABYSSINIA : Harar, long. 42° 10′ E., lat. 9° 10′ N., 1,620 m., Feb., No. 5055. Haramaia, long. 42° E., lat. 9° 24′ N., 1,980 m., Mar., No. 5469.

Cotula abyssinica Sch. Bip.—F.T.A. 3 : 398.

ABYSSINIA : Gorla-Kolubi track, long. 41° 45′ E., lat. 9° 22′ N., 2,610 m., in grass land, fls. yellowish, Mar., No. 5400.

Anthemis tigréensis J. Gay ex A. Rich. Fl. Abyss. 418 (1847). A. Cotula *Oliv. & Hiern*—F.T.A. 3 : 396, non Linn.

ABYSSINIA : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 3,000 m., on limestone rocks, rays white, Mar., No. 5320.

Artemisia abyssinica Sch. Bip.—F.T.A. 3 : 400.

ABYSSINIA : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,280 m., fls. straw-coloured, very aromatic, Feb., No. 5196. Vernac.—*Jukun.*—Endemic.

Aster ericifolius Forssk. Fl. Aegypt-Arab. 1 : 50 (1775).

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., rays bluish, Sept. No. 3974. Vernac.—*Barkwa allele.*—Also in Arabia and Abyssinia.

Conyza aegyptiaca Ait.—F.T.A. 3 : 314 ; F.W.T.A. 2 : 154.

SOMALILAND : Boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,290 m., fls. yellow, Oct., No. 4130.

C. Hochstetteri Sch. Bip.—F.T.A. 3 : 312.

ABYSSINIA : Harar, long. 42° 6′ E., lat. 9° 18′ N., 1,890 m., fls. pale yellow, Feb., No. 5018.

C. pectinata Sch. Bip.—F.T.A. 3 : 315.

ABYSSINIA : Mulkajibri, long. 42° 16′ E., lat. 9° 24′ N., 1,770 m., fls. pale yellow, Feb., No. 5089.—Endemic.

C. pyrrhopappa Sch. Bip.—F.T.A. 3 : 318.

ABYSSINIA : Harar, long. 42° 10′ E., lat. 9° 20′ N., 1,740 m., fls. pale yellow, Feb., No. 5039.

C. stricta Willd.—F.T.A. 3 : 318.

SOMALILAND : Simodi, long. 43° 30′ E., lat. 10° 5′ N., 1,740 m., among rocks on mountain top, 1 m., fls. yellow, Nov., No. 4579.

Dichrocephala integrifolia (Ait.) O. Kze Rev. Gen. Plant. 1 : 333 (1891).

ABYSSINIA : Harar, long. 42° 6′ E., lat. 9° 18′ N., 1,830 m., fls. green, Feb., No. 5001.

Athrixia rosmarinifolia Oliv. & Hiern—F.T.A. 3 : 355.

ABYSSINIA : Gafra valley, long. 41° 48′ E., lat. 9° 12′ N., 2,700 m., in Juniperus-Podocarpus forest, rays mauve, Mar., No. 5347.

Tarchonanthus camphoratus Linn.—F.T.A. 3 : 321.

SOMALILAND : Afard, long. 44° 8′ E., lat. 10° 8′ N., 1,170 m., in *Buxus* scrub, shrub 2 m., Oct., No. 4468. Vernac.—*Adadi.*

Psiadia arabica Jaub. & Spach.—F.T.A. 3 : 319.

SOMALILAND : Duwi, long. 4° 15′ E., lat. 10° 5′ N., 1,200 m., in *Buxus* scrub, shrub 1 m., fls. yellow, Oct., No. 4425. Vernac.—*Midir Guni.*

P. incana Oliv. & Hiern—F.T.A. 3 : 320.

SOMALILAND : Boundary Pillar 99, long. 44° 39′ E., lat. 8° 47′ N., 1,140 m., fls. white, Oct., No. 4140. Jalelo, long. 44° 14′ E., lat. 9° 45′ N., 1,080 m., on schist rocks, shrublet 0·5 m., fls. white, Oct., No. 4294. Vernac.—*Daiya.*—Endemic.

Iphiona rotundifolia Oliv. & Hiern—F.T.A. 3 : 360.

SOMALILAND : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., small shrub, fls. white, Oct., No. 4200. Duwi, long. 44° 8′ E., lat. 10° 10′ N., 510 m., on sand, shrublet 0·5 m., fls. purple, Oct., No. 4432. Vernac.—*Gegabot.*—Endemic.

I. scabra DC.—F.T.A. 3 : 360.

ADEN : on lava slopes, 0·7 m., fls. yellow, Mar., No. 5494.—Also in Egypt and Arabia.

Phagnalon hypoleucum Sch. Bip.—F.T.A. 3 : 338.

ABYSSINIA : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,460 m. fls. dingy yellow, Feb., No. 5154.—Endemic.

Nidorella pedunculata Oliv. in James Unknown Horn of Africa 319 (1888).

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., fls. yellow, Sept., No. 4061. Jifa Uri, long. 43° 22′ E., lat. 9° 42′ N., 1,680 m., stems prostrate, fls. yellow, Jan., No. 4834. Vernac.—*Adan yale.*—Endemic.

Microglossa Elliotii S. Moore in Journ. Linn. Soc. 35 : 327 (1902).

ABYSSINIA : Gara Mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,400–2,850 m., on limestone slopes, 2 m., fls. yellow, Mar., No. 5284.

Pulicaria Aylmeri Baker in Kew Bull. 1895 : 216.

SOMALILAND : Berbera, near the sea, 0·5 m., fls. yellow, Jan., No. 4748.—Endemic.

P. petiolaris Jaub. & Spach—F.T.A. 3 : 364.

SOMALILAND : Burmado, long. 43° 50′ E., lat. 10° 13′ N., 980 m., in shade of boulders, 0·7 m., fls. yellow, Nov., No. 4540.

P. somalensis O. Hoffm. in Engl. Bot. Jahrb. 38 : 203 (1906).

SOMALILAND : Marmar Range, long. 42° 47′ E., lat. 10° 29′ N., 1,050 m., 0·5 m., fls. yellow, fragrant and viscous, Nov., No. 4656. Vernac.—*Adar ; Audidowa.*—Endemic.

Inula confertiflora A. Rich.—F.T.A. 3 : 358.

ABYSSINIA : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,460 m., on limestone, 1·5 m., fls. yellow, Feb., No. 5155.—Endemic.

Pluchea Dioscoridis DC.—F.T.A. 3 : 329.

SOMALILAND : Gorfulai, long. 43° 38′ E., lat. 10° 16′ N., 510 m., shrub 1·2 m., fls. white, Nov., No. 4555. Satoa, long. 43° 5′ E., lat. 9° 59′ N., 1,500 m., shrub 1 m., fls. white, Nov., No. 4615. Vernac.—*Bi-es.*

P. ovalis DC.—F.T.A. 3 : 328 ; F.W.T.A. 2 : 157.

SOMALILAND : Bir Dai, long. 44° 17′ E., lat. 9° 55′ N., 900 m., in water, shrub 2 m., fls. cream, Oct., No. 4337.

P. sarcophylla Chiov. Fl. Somala 198 (1929).

SOMALILAND : Las dawan, long. 45° 12′ E., lat. 10° 20′ N., 180 m., 30 cm., fls. purple, leaves succulent, Jan., No. 4805.—Endemic.

Blumea Bovei (DC.) Vatke in Oesterr. Bot. Zeitschr. 1875 : 324. B. abyssinica *Sch. Bip. ex A. Rich.*—F.T.A. 3 : 323.

SOMALILAND : Debrawen, long. 42° 49′ E., lat. 10° 26′ N., 920 m., in marshy places, fls. lilac, Nov., No. 4647. Vernac.—*Bi-es.*

B. lacera DC.—F.T.A. 3 : 322 ; F.W.T.A. 2 : 158.

ABYSSINIA : Boesesa valley, long. 42° 18′ E., lat. 9° 29′ N., 1,950 m., fls. purplish, Feb., No. 5170.

Pegolettia senegalensis Cass.—F.T.A. 3 : 361 ; F.W.T.A. 2 : 158.

SOMALILAND : Hargeisa, long. 44° E., lat. 9° 35′ N., 1,410 m., sandy soil, fls. yellow, viscid, Oct., No. 4265.

Laggera pterodonta Sch. Bip.—F.T.A. 3 : 324 ; F.W.T.A. 2 : 158.

ABYSSINIA : Harar, long. 42° 6′ E., lat. 9° 18′ N., 1,920 m., on limestone, 0·5 m., fls. purple, viscid and aromatic, Feb., No. 5023.

L. tomentosa Sch. Bip.—F.T.A. 3 : 325.

ABYSSINIA : Gafra Valley, long. 42° 19′ E., lat. 9° 28′ N., 2,250 m., Feb., No. 5167. Vernac.—*Kaskas.*

Helichrysum abyssinicum Sch. Bip.—F.T.A. 3 : 351.

ABYSSINIA : Kondudo Mt., long. 42° 20′ E., lat. 9° 27′ N., 2,610–2,790 m., on limestone slopes, 0·3 m., fls. yellow, Feb., No. 5205.

H. globosum Sch. Bip.—F.T.A. 3 : 354 ; F.W.T.A. 2 : 159.

ABYSSINIA : Gara mulata Mt., long. 41° 45′ E., lat. 9° 15′ N., 2,490 m., on denuded limestone slopes, fls. yellow, Mar., No. 5377. Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,190 m., Mar., No. 5427.

H. glumaceum DC. Prod. 6 : 197 (1837).

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 35′ N., 1,380 m., fls. white, Sept., No. 4034. Vernac.—*Majino.*

H. Hochstetteri Hook. f. in Journ. Linn. Soc. 6 : 13 (1862).

ABYSSINIA : Geldid, long. 41° 48′ E., lat. 9° 15′ N., 2,400 m., fls. bright yellow, Mar., No. 5387. Vernac.—*Najilo.*

H. Schimperi Moeser in Engl. Bot. Jahrb. 44 : 244 (1910).

ABYSSINIA : Geldid, fls. pale yellow, Mar., No. 5388.

H. Traversii Chiov. in Ann. Bot. Roma 9 : 72 (1911).

ABYSSINIA : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,880 m., fls. dull yellow, Mar., No. 5321.—Endemic.

Gnaphalium Unionis Sch. Bip.—F.T.A. 3 : 343.

ABYSSINIA : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,040–2,340 m., white, Feb., No. 5108.

Sphaeranthus suaveolens DC.—F.T.A. 3 : 333.

ABYSSINIA : Harar, long. 42° 10′ E., lat. 9° 20′ N., 1,740 m., in stream, fls. purple, Feb., No. 5033. Vernac.—*Ala shien.*

Blepharispermum fruticosum Klatt & Schinz in Bull. Herb. Boiss. 3 : 429 (1895).

SOMALILAND : Boundary, long. 45° 9′ E., 8° 37′ N., 990 m., shrub 1 m., fls. cream, Oct., No. 4158. Vernac.—*Gehait.*—Endemic.

Vernonia amplexicaulis Baker in Kew Bull. 1895 : 216.

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., 1 m., fls. mauve, Sept., No. 3908. Vernac.—*Fodadeh.*

V. amygdalina Del.—F.T.A. 3 : 284 ; F.W.T.A. 2 : 169.

ABYSSINIA : Gara mulata Mt., long. 41° 45′ E., lat. 9° 15′ N., 2,460 m., slender tree 5 m., fls. pale mauve, Mar., No. 5378. Vernac.—*Dumoga.*

V. atriplicifolia Jaub. & Spach—F.T.A. 3 : 270.

ADEN : 150 m., on lava, fls. purple, 22 Mar., No. 5521.

V. cinerascens Sch. Bip.—F.T.A. 3 : 275.

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., shrub 0·5 m., Sept., No. 4000. Vernac.—*Hil.*

V. Hochstetteri Sch. Bip.—F.T.A. 3 : 287.

ABYSSINIA : Geldid, long. 41° 48′ E., lat. 9° 15′ N., 2,400 m., 1·5 m., fls. mauve, Mar., No. 5390.—Endemic.

V. Leopoldii Vatke—F.T.A. 3 : 277.

ABYSSINIA : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,700 m., in *Podocarpus-Juniperus* forest, fls. purple, Mar., No. 5346.—Also in Eritrea.

V. podocoma Sch. Bip.—F.T.A. 3 : 296.

ABYSSINIA : Harar, long. 42° 6′ E., lat. 9° 18′ N., 1,920 m., on limestone, shrub 2 m., fls. mauve, Feb., No. 5004.

Triplotaxis somalensis (O. Hoffm.) Hutch. in Kew Bull. 1914 : 355.

SOMALILAND : Boundary 7 miles west of long. 44° E., and lat. 9° N., about 1,350 m., in Acacia-grass country, fls. purplish blue, Oct., No. 4224.—Endemic.

Ageratum conyzoides Linn.—F.T.A. 3 : 300 ; F.W.T.A. 2 : 127.

ABYSSINIA : Mulkajibri, long. 42° 16′ E., lat. 9° 24′ N., 1,620 m., by stream, fls. pale blue, Feb., No. 5081.

Dicoma somalensis S. Moore in Journ. Bot. 1899 : 60.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., shrub 0·5 m., fls. white, Sept., No. 4002. Auboba, long. 43° E., lat. 10° 6′ N., 1,620 m., fls. white, Nov., No. 4620. Vernac.—*Ma-adadi*.—Endemic.

Hochstetteria Schimperi DC.—F.T.A. 3 : 444.

Aden : About 300 m., on lava, fls. white, Mar., No. 5510.

Gerbera piloselloides Cass.—F.T.A. 3 : 445 ; F.W.T.A. 2 : 174.

Abyssinia : Gara mulata Mt., long. 41° 33′ E., lat. 9° 12′ N., 2,700–3,090 m., rays dark crimson, Mar., No. 5323.

Flaveria australasica Hook. in Mitch. Journ. Trop. Austral. 118 (1848).

Somaliland : Gorfulai, long. 43° 38′ E., lat. 10° 16′ N., 480 m., by water, fls. yellow, Nov., No. 4552.

Landtia Ruppellii Benth. & Hook. f.—F.T.A. 3 : 426.

Abyssinia : Slopes of Sârerta Mt., long. 42° 19′ E., lat. 9° 30′ N., 2,400 m., fls. yellow, Feb., No. 5186.

L. Schimperi Benth. & Hook. f.—F.T.A. 3 : 426.

Abyssinia : Gorla, long. 41° 48′ E., lat. 9° 20′ N., 2,700 m., fls. yellow, Mar., No. 5395.

Echinops Ellenbeckii O. Hoffm. in Engl. Bot. Jahrb. 38 : 208 (1906).

Abyssinia : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,340 m., on limestone, 3 m., fls. red, Feb., No. 5123. Vernac.—*Kusheshila*.—Endemic.

E. machrochaetus Fres.—F.T.A. 3 : 432.

Abyssinia : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,400 m., on limestone, 0·8 m., fls. pale blue, Feb., No. 5140.—Also in Eritrea.

E. spinosus Linn.—F.T.A. 3 : 431.

Abyssinia : Mulkajibri, long. 42° 17′ E., lat. 9° 26′ N., 1,890 m., waste places in lower evergreen formation, fls. pale blue, spines of inflorescence straw-coloured, Feb., No. 5095. Vernac.—*Kosheshila*.

Cirsium vulgare (Savi) Airy-Shaw in Fedde Repert. 43: 304 (1938).

Abyssinia : Kofajalo, long. 41° 51′ E., lat. 9° 9′ N., 2,130 m., fls. purple, Mar., No. 5274.

Carduus leptacanthus Fres.—F.T.A. 3 : 433.

Abyssinia : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,100 m., 1 m., fls. purple, Feb., No. 5110.

Jurinea monocephala Aitch. & Hemsl. in Trans. Linn. Soc. ser. 2, 3 : 80 (1886).

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 35′ N., 1,440 m., in denuded areas, fls. purple, leaves white, Sept., No. 4028.

Distrib.—Also in Afghanistan, at Khorasan, 1,500 m.—This is an interesting new record and adds another genus to the flora of tropical Africa.

Lactuca capensis Thunb.—F.T.A. 3 : 452 ; F.W.T.A. 2 : 177.

Abyssinia : Harar, long. 42° 6′ E., lat. 9° 18′ N., 1,890 m., on limestone, fls. pale blue, Feb., No. 5017. Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,340 m., 1 m., fls. violet, Feb., No. 5122.

L. goraeënsis Sch. Bip.—F.T.A. 3 : 452 ; F.W.T.A. 2 : 177.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., fls. yellow, Sept., No. 3966. Vernac.—*Burdeh.*

Crepis Rueppellii Sch. Bip.—F.T.A. 3 : 450.

Abyssinia : Harar, 1,920 m., on limestone, fls. yellow, Feb., No. 5020.

Sonchus Bipontinii Aschers.—F.T.A. 3 : 458.

Abyssinia : Harar, 1,920 m., fls. yellow, Feb., No. 5021. Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,280 m., by stream, 2 m., fls. yellow, Feb., No. 5199.

Gentianaceae.

Swertia Quartiniana A. Rich.—F.T.A. 4, 1 : 574.

Abyssinia : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,820 m., Mar., No. 5311b.—Also in Kenya.

S. Schimperi Griseb.—F.T.A. 4, 1 : 573.

Abyssinia : Gara mulata Mt., 2,820 m., damp limestone rocks, Mar., No. 5311a.

Primulaceae.

Anagallis arvensis Linn.—F.T.A. 3 : 490.

Abyssinia : Geldid, long. 41° 48′ E., lat. 9° 15′ N., 2,430 m., on muddy stream bank, fls. blue, Mar., No. 5379.

A. serpens Hochst. ex DC. Prod. 8 : 668 (1844).

Abyssinia : Gara mulata Mt., long. 41° 45′ E., lat. 9° 15′ N., 3,060 m., by water, prostrate, fls. pink, Mar., No. 5366.

Lysimachia africana Engl. in Abh. Preuss. Akad. Wiss. 1894 : 55 and 59.

Abyssinia : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,820 m., fls. purplish, Mar., No. 5351.

Primula verticillata Forssk. var. *simensis* Hook. f.—F.T.A. 3 : 488.

Abyssinia : Gara mulata Mt., 2,790 m., upper evergreen forest, leaves nearly white, fls. yellow, Mar., No. 5334.

Plumbaginaceae.

Ceratostigma speciosum Prain in Journ. Bot. 44 : 8 (1906).

Somaliland : Abasa, long. 43° 4′ E., lat. 10° 6′ N., 1,470 m., on gneiss slopes, 40 cm., fls. sky blue, Dec., No. 4716. Vernac.—*Elandabera.*

C. abyssinicum Aschers.—F.T.A. 3 : 487.

Abyssinia : Kofajalo, long. 41° 51′ E., lat. 9° 9′ N., 2,310 m., near stream, 1 m., fls. pale blue, Mar., No. 5282.

Limonium axillare (Forssk.) O. Kuntze Rev. Gen. 395 (1891). Statice axillaris *Forssk.*

Aden : 210–510 m., lava slopes in subdesert, tufted, fls. purple, Mar., No. 5475.

L. xipholepis (Baker) Hutch. & E. A. Bruce, comb. nov. Statice xipholepis *Baker.*

Somaliland: Dubriat Mt., long. 45° 10′ E., lat. 10° 22′ N., about 300 m., in open scrub, leaves white, fls. crimson, Jan., No. 4784.—Endemic.

L. somalorum (Vierh.) Hutch. & E. A. Bruce, comb. nov. Statice somalorum *Vierh.*

Somaliland: Las Dawan, long. 45° 12′ E., lat. 10° 20′ N., 1,800 m., small shrub 40 cm., fls. pink, Jan., No. 4806. Vernac.—*Dumbaiyod.*—Endemic.

Plumbago zeylanica Linn.—F.T.A. 3: 486.

Somaliland: Simodi, long. 43° 30′ E., lat. 10° 5′ N., 1,200 m., in open wood, fls. white, Nov., No. 4565. Abyssinia: Harar, long. 42° 10′ E., lat. 9° 20′ N., 1,740 m., on granite, Feb., No. 5038. Vernac.—*Elkus* (Somali); *Martus* (Abyss.).

Plantaginaceae.

Plantago lanceolata Linn.—F.T.A. 5: 502.

Abyssinia: Harar, long. 42° 6′ E., lat. 9° 18′ N., 1,590 m., Feb., No. 5015.

Campanulaceae.

Campanula Quartiniana A. Rich.—F.T.A. 3: 481.

Abyssinia: Kondudo Mt., long. 42° 20′ E., lat. 9° 27′ N., 2,640 m., on mountain slopes, trailing herb, fls. blue, Feb., No. 5211.—Also in Eritrea.

Lightfootia abyssinica Hochst. ex A. Rich.—F.T.A. 3: 474.

Abyssinia: Harar, long. 42° 10′ E., lat. 9° 40′ N., 1,740 m., open grass, fls. blue, Feb., No. 5041.

Wahlenbergia silenoides Hochst. ex A. Rich.—F.T.A. 3: 478.

Abyssinia: Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,400 m., in open grass, fls. pale lilac, Feb., No. 5161.—Also in Uganda.

Lobeliaceae.

Lobelia Rhynchopetalum Hemsl.—F.T.A. 3: 465.

Abyssinia: Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,790–3,210 m., in Erica formation, 5 m., fls. bluish green, Mar., No. 5317. Vernac.—*Gaboia.*

L. stellarioides (Presl) Benth. & Hook. f. ex Hemsl.—F.T.A. 3: 470.

Abyssinia: Gorla-Kolubi track, long. 41° 45′ E., lat. 9° 22′ N., 2,610 m., open grassland, fls. yellow, then blue, Mar., No. 5401.

L. fervens Thunb.—F.T.A. 3: 468.

Abyssinia: Kofajalo, long. 41° 51′ E., lat. 9° 9′ N., 2,280 m., marshy places, fls. pale blue, Mar., No. 5279.

Boraginaceae.

Ehretia abyssinica R. Br.—F.T.A. 4, 2: 23.

Abyssinia: Harar, long. 42° 10′ E., lat. 9° 20′ N., 1,650 m., small tree 3–4 m., fls. white tinged with lilac, Feb., No. 5051. Vernac.—*Garmi.*—Also in Eritrea.

E. Braunii Vatke—F.T.A. 4, 2 : 23.

Somaliland : Deriodera, long. 42° 55′ E., lat. 10° 3′ N., 1,170 m., shrub 3 m., fls. lilac, Nov., No. 4644. Vernac.—*Mared Deol.*

E. obtusifolia Hochst. ex DC.—F.T.A. 4, 2 : 25.

Somaliland : Hargeisa, long. 44° E., lat. 9° 33′ N., 1,290 m., 2 m., berries edible, Sept., No. 4045. Buramo-Dumuk tug, long. 43° 12′ E., lat. 10° 1′ N., 1,200 m., shrub 3 m., fls. white tinged with blue, berries edible, Jan., No. 4886. Vernac.—*Mared Deol.*

Ehretia orbicularis Hutch. et E. A. Bruce, sp. nov. affinis *E. obtusifoliae* Hochst. ex DC., sed foliis orbicularibus minoribus, cymis paucifloris differt.

Frutex ad 3 m. altus ; rami cinereo-purpurei, circiter 4 mm. crassi, adpresse pubescentes demum glabrescentes, ramulis lateralibus brevissimis ad 1·5 cm. longis molliter tomentosis. *Folia* ad apices ramulorum aggregata, parva, orbicularia, late emarginata, 1·5–2 cm. diametro, integra, utrinque scabrida et glandulosa, nervis lateralibus circiter 4 inconspicuis flexuosis marginem versus evanidis ; petioli 4–5 mm. longi, molliter pubescentes. *Cymae* extra-axillares, pauciflorae ; pedunculi ad 1 cm. longi cum pedicellis 4–5 mm. longis molliter pubescentes. *Calyx* campanulatus, extra pubescens, tubo 2 mm. longo, lobis triangulari-ovatis acutis 2·5 mm. longis. *Corolla* campanulata, pallide cremea, tubo 4 mm. longo glabro, lobis late ovatis subacutis extra minute glandulosis. *Stamina* infra apicem corollae tubi inserta ; antherae 2 mm. longae. *Ovarium* ovoideum, glabrum, 1·5 mm. longum ; stylus 2·5 mm. longus, breviter bilobus, stigmatibus reniformibus. *Fructus* ovoideo-globosus, 5 mm. diametro, glaber.

Somaliland : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 900 m., shrub 2 m., 5 Oct., No. 4168. Afard, long. 48° 8′ E., lat. 10° 10′ N., 690 m., shrub 3 m., fls. pale cream, 26 Oct., No. 4472 (type in Kew Herb.). Vernac.—*Himir.*

Cordia Gharaf Ehrenb. ex Aschers. in Sitzungsber. Naturf. Fer. Berl. 1879 : 46. C. Rothii *Roem. & Schult.*—F.T.A. 4, 2 : 18.

Somaliland : Afard, long. 44° 8′ E., lat. 10° 10′ N., 690 m., shrub 2 m., Oct., No. 4445. Vernac.—*Mared.* Wood used for making fire by friction. Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., 6 Oct., No. 4191.

C. ovalis R. Br.—F.T.A. 4, 2 : 15.

Somaliland : Daraweina, long. 48° 8′ E., lat. 9° 40′ N., 1,230 m., shrub 4 m., fr. Oct., No. 4280. Hargeisa, long. 44° E., lat. 9° 35′ N., 1,410 m., shrub 3 m., fruit edible and very pleasant, Oct., No. 4262 Vernac.—*Mared.*

Heliotropium abyssinicum Vatke—F.T.A. 4, 2 : 41.

Somaliland : Dubriat Mt., long. 45° 10′ E., lat. 10° 22′ N., 210 m., shrublet 40 cm., fls. dull yellow, Jan., No. 4791.—Also in Eritrea.

H. cinerascens Steud. ex DC.—F.T.A. 4, 2 : 39.

Abyssinia : Harar, long. 42° 10′ E., lat. 9° 20′ N., 1,650 m., 0·5 m., fls. white, Feb., No. 5064. Vernac.—*Baganapsi.*

H. pterocarpum DC.—F.T.A. 4, 2 : 35.

SOMALILAND : Berbera, fls. white, Jan., No. 4740. Vernac.—*Gahod.*

Heliotropium sessilistigma Hutch. et E. A. Bruce, sp. nov., ob stigma sessile globosum valde distincta.

Suffrutex e basi lignosa dense ramosus, ubique dense adpresse albido-pilosus. *Folia* conferta, subsessilia, ovato-lanceolata, subacuta, circiter 4 mm. longa et 2 mm. lata marginibus recurvatis. *Flores* albi, ad apices ramulorum dense glomerati, sessiles. *Calycis lobi* lanceolati, acuti, circiter 2mm. longi, setoso-pilosi. *Corolla* calycem paullo superans ; tubus cylindricus, extra parce pubescens, intra glaber, 1 mm. longus ; lobi triangulari-lanceolati, acuti, extra dense pilosi, basi intra dense setosi. *Antherae* leviter supra medium corollae tubi insertae, lineari-lanceolatae, 0·5 mm. longae. *Ovarium* globosum, 0·5 mm. diametro, glabrum, stigmate globoso sessili coronatum.

SOMALILAND : Boundary, long. 44° 15′ E., lat. 8° 58′ N., 1,260 m., fls. white, 30 Sept., No. 4107 (type in Kew Herb.). Vernac.—*Gahot.*

H. strigosum Willd.—F.T.A. 4, 2 : 41.

SOMALILAND : Afard, long. 44° 8′ E., lat. 10° 10′ N., 690 m., 0·3 m., fls. white, Oct., No. 4444. Marmar Range, long. 42° 47′ E., lat. 10° 29′ N., 1,050 m., fls. white, Nov., No. 4655. Vernac.—*Maragh fof ; Ged ambar.*

H. supinum L.—F.T.A. 4, 2 : 37.

SOMALILAND : Buramo, long. 43° 10′ E., lat. 10° N., 1,410 m., fls. white, Jan., No. 4856. Vernac.—*Gahod.*

H. undulatifolium Turrill in Kew Bull. 1915 : 76.

SOMALILAND : Hargeisa, long. 44° E., lat. 9° 33′ N., 1,290 m., fls. white, Sept., No. 3968.

H. undulatum Vahl—F.T.A. 4, 2 : 37.

SOMALILAND : Biji, long. 44° 5′ E., lat. 10° 12′ N., 510 m., 30 cm., fls. white, Oct., No. 4508. Vernac.—*Forda ada.*

H. zeylanicum Lam.—F.T.A. 4, 2 : 31.

SOMALILAND : Hargeisa, 1,290 m., fls. greenish, Oct., No. 3960. Vernac.—*Gahoub.*

Trichodesma calathiforme Hochst.—F.T.A. 4, 2 : 49.

SOMALILAND : Burmado, long. 43° 50′ E., lat. 10° 13′ N., 960 m., fls. blue with brown eye, Nov., No. 4541. Ali Wein Mt., long. 45° 15′ E., lat. 10° 24′ N., 300 m., Jan., No. 4824. Vernac.—*Gahod.*

Vaupelia heliocharis (S. Moore) Brand in Fedde Repert. 13 : 83 (1914). Trichodesma heliocharis *S. Moore*—F.T.A. 4, 2 : 45.

SOMALILAND : Hargeisa, long. 44° E., lat. 9° 35′ N., 1,410 m., fls. very pale blue, eaten by stock, Sept., No. 4031. Vernac.—*Aden yale.*—Endemic.

Cynoglossum coeruleum Hochst. ex DC.—F.T.A. 4, 2 : 53.

ABYSSINIA : Gara mulata Mt., long. 41° 45′ E., lat. 9° 15′ N., 3,180 m., fls. bright blue, Mar., No. 5368.

C. lanceolatum Forssk.—F.T.A. 4, 2 : 54.

Abyssinia : Harar, long. 42° 10′ E., lat. 9° 20′ N., 1,650 m., fls. white, Feb., No. 5063.

C. densifoliatum Chiov. in Ann. Bot. Rom. 9 : 82 (1911).

Abyssinia : Gallą Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,490 m., fls. bright blue, Feb., No. 5160.—Endemic.

Sericostoma albidum Franch.—F.T.A. 4, 2 : 57.

Somaliland : Hargeisa, long. 44° 35′ N., 1,440 m., fls. cream, 24 Sept., No. 4026. Afard, long. 44° 8′ E., lat. 10° 10′ N., 600 m., fls. white, Oct., No. 4448. Dobo Pass, long. 43° 15′ E., lat. 10° 15′ N., 1,200 m., Feb., No. 4959. Vernac.—*Hadu.*—Also in Socotra.

Lithospermum officinale L.—F.T.A. 4, 2 : 59.

Abyssinia : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,700 m., fls. cream, Mar., No. 5303.

Echiochilon fruticosum Desf.—F.T.A. 4, 2 : 61.

Somaliland : Dubriat Mt., long. 45° 10′ E., lat. 10° 22′ N., 150 m., fls. pale blue, Jan., No. 4776.

E. longiflorum Benth. in Hook. Ic. Pl. t. 1277 (1879).

Somaliland : Dubriat Mt., long. 45° 10′ E., lat. 10° 22′ N., 210 m., pale lilac, Jan., No. 4787.—Also in Arabia.

Solanaceae.

Datura Metel Linn.—F.T.A. 4, 2 : 256 ; F.W.T.A. 2 : 202.

Somaliland : Durdur, long. 43° 30′ E., lat. 10° 10′ N., 660 m., fls. white, Nov., No. 4582. Vernac.—*Boa medu.*

Discopodium penninervium Hochst.—F.T.A. 4, 2 : 253 ; F.W.T.A. 2 : 205, fig. 248.

Abyssinia : Galla Pass, No. 5125.

Lycium europaeum Linn. Sp. Pl. 192 (1753). L. persicum *Miers*—F.T.A. 4, 2 : 254.

Somaliland : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., bush 1 m., fls. white or bluish, Oct., No. 4154. Jebel Wotni Mt., long. 45° 6′ E., lat. 10° 18′ N., 390 m., shrub 1·5 m., corolla tube pale lilac, limb bright blue, Jan., No. 4798. Boundary : long. 44° 15′ E., lat. 8° 55′ N., 1,260 m., 0·2 m., fls. white, Sept., No. 4075. Aden : 150–450 m., 1 m., fls. blue, Mar., No. 5495. Vernac.—*Surut ; Ausug.*

Withania somnifera Dun.—F.T.A. 4, 2 : 249.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., fls. greenish yellow, Sept., No. 3965. Daba Bur, long. 43° 6′ E., lat. 9° 59′ N., 1,470 m., shrub 1 m., fls. green, Nov., No. 4604. Vernac.—*Gutitu ; Shuna shuna.*

Solanum adoense Hochst.—F.T.A. 4, 2 : 233.

Abyssinia : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,730 m., 1 m., fls. very pale blue, fruit orange, Mar., No. 5357.

S. campylacanthum Hochst.—F.T.A. 4, 2 : 239.

Abyssinia : Mulkajibri, long. 42° 16′ E., lat. 9° 24′ N., 1,770 m., 1 m., fls. purple, fruit yellow, Feb., No. 5087. Vernac.—*Omboi.*

S. carense Dunal—F.T.A. 4, 2 : 219.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,410 m., shrublet 0·5 m., fls. blue, berries poisonous to man, Sept., No. 3901. Vernac.—*Karil.*

S. dubium Fres.—F.T.A. 4, 2 : 235.

Somaliland : Hargeisa, 1,290 m., 0·25 m., fls. blue, Sept., No. 3964. Vernac.—*Mor.*

Solanum Gillettii Hutch. et E. A. Bruce, sp. nov., affinis *S. cynanchoidi* Chiov. sed ubique densius stellato-tomentosa, aculeis majoribus recurvatis, petiolis brevioribus differt.

Frutex ad 1·5 m. altus ; rami aculeati, tomentosi, aculeis recurvatis circiter 8 mm. longis dimidiis inferioribus tomentosis. *Folia* ovata, margine undulata, breviter et late acuminata, basi subrotundata, 4–5 cm. longa, 3–3·5 cm. lata, utrinque stellato-tomentosa ; costa media infra aculeis 2–3 armata ; nervi laterales utrinsecus 4–5 ; petioli circiter 3 mm. longi. *Cymae* subsessiles, pauciflorae ; pedicelli circiter 1 cm. longi, tomentosi. *Calyx* vix 1 cm. longus, extra tenuiter tomentosus, lobis 5 triangulari-lanceolatis tubo aequilongis. *Corolla* 2 cm. longa, profunde lobata, lobis lineari-lanceolatis mucronatis utrinque stellato-pubescentibus. *Antherae* exsertae, 8–10 mm. longae. *Stylus* antheris longior, basin versus pubescens.

Abyssinia : Harar-Gobelli road, long. 42° 1′ E., lat. 9° 12′ N., 1,740 m., 1·5 m., fls. purple, fruit yellow, 1 Mar., No. 5255 (type in Kew Herb.). Vernac.—*Omboi.*

S. gracilipes Decne—F.T.A. 4, 2 : 228.

Somaliland : Buramo, long. 43° 10′ E., lat. 10° N., 1,260 m., fls. purplish-blue, subscandent, Jan., No. 4877.

Abyssinia : long. 42° 19′ E., lat. 9° 28′ N., 2,400 m., fls. white, Feb., No. 5149.—Also in Socotra and east to India.

S. hastifolium Hochst. ex Dunal—F.T.A. 4, 2 : 226.

Somaliland : Dobo Pass, long. 43° 15′ E., lat. 10° 15′ N., 1,140 m., climber 2 m., fls. blue, Feb., No. 4954.

S. incanum Linn.—F.T.A. 4, 2 : 238.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., shrub 2 m., fls. blue, Sept., No. 3931. Boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,290 m., 0·5 m., fls. blue, Oct., No. 4127. Vernac.—*Mor* ; *Moh* ; *Addur.*

S. marginatum Linn. f.—F.T.A. 4, 2 : 235.

Abyssinia : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,340 m., fls. greenish cream and purple, Feb., No. 5127. Vernac.—*Umboi.*—Also in Eritrea.

S. melastomoides Wright—F.T.A. 4, 2 : 226.

Somaliland : Boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,290 m., shrub 0·5 m., fls. pale blue, Oct., No. 4108. Vernac.—*Mor.*—Endemic.

S. Melongena Linn.—F.T.A. 4, 2 : 242.

Somaliland : Wobleh mt., long. 43° 17′ E., lat. 10° 15′ N., 1,380 m., prostrate or nearly so, fls. blue, Feb., No. 4983.

S. nigrum Linn.—F.T.A. 4, 2 : 218.

Somaliland : Boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,290 m., fls. white, Oct., No. 4126. Buramo-Warieto tug, long. 43° 10′ E., lat. 10° 2′ N., 1,080 m., fls. white faintly blue-tinged, Feb., No. 4923. Abyssinia : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,430 m., fls. white, Mar., No. 5285.

S. obbiadense Chiov. Fl. Somala 239 (1929).

Somaliland : Boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,260 m., prostrate subshrub, fls. bluish, Sept., No. 4097. Vernac.—*Me-eh godleh.*—Endemic.

S. sepicula Dun. in DC. Prod. 13, 1 : 283 (1852).

Somaliland : Abasa, long. 43° 4′ E., lat. 10° 6′ N., 1,470 m., up to 30 cm., fls. purple, Dec., No. 4715. Vernac.—*Mee godle.*—Also in Arabia.

Physalis peruviana Linn.—F.T.A. 4, 2 : 248.

Abyssinia : Kondudo Mt., long. 42° 20′ E., lat. 9° 27′ N., 2,640 m., fls. yellow with four black blotches at centre, Feb., No. 5206. Vernac.—*Tomatin.*

Convolvulaceae.

Convolvulus glomeratus Choisy—F.T.A. 4, 2 : 94.

Somaliland : Elmis, long. 44° 14′ E., lat. 10° 22′ N., 510–600 m., fls. white, pink-tinged when fading, Oct., No. 4504. Vernac.—*Dānejo.*

C. Hystrix Vahl—F.T.A. 4, 2 : 90.

Somaliland : Berbera, straggling prostrate, fls. blue, Jan., No. 4735. Vernac.—*Geldabar.*

C. sericophyllus T. Anders.—F.T.A. 4, 2 : 90.

Somaliland : Elmis, 240 m., shrublet, 0·5 m., fls. white, Oct., No. 4490. Berbera, 90 m., fls. white with pink stripe, Jan., 4764.—Also in Aden.

Merremia Cliffordii Hutch. et E. A. Bruce, sp. nov., aspectu *M. multisectae* Hallier f., sed ramis pedunculis et calycibus longe setoso-pilosis differt.

Caules graciles, virides, primum setoso-pilosi, mox glabrescentes. *Folia* ambitu rotundata vel late ovata, 4–5 cm. lata, profunde 3–5-partita, glauco-viridia, glabra, segmentis pinnatipartitis et undulatim lobulatis ; petioli usque ad 3 cm. longi, setoso-pilosi. *Flores* flavo-rubri ; pedunculi foliis longiores usque ad 8 cm. longi, 2–5-flori ; bracteae lineares, mucronatae, 2–3 mm. longae ; pedicelli 1–1·5 cm. longi. *Sepala* ovato-oblonga, apice obtusa, multivenosa, circiter 1·2 cm. longa, 0·6 cm. lata, exteriora setoso-pilosa. *Corolla* late infundibuliformis, 2 cm. longa, glabra ; tubus 1·3 cm. longus, lobis rotundatis. *Antherae* 6 mm. longae, apice recurvatae, filamentis 7 mm. longis. *Ovarium* ovoideum, glabrum ; stylus 1·1 cm. longus, glaber. *Discus* annularis, carnosus, glaber. *Capsula* late ellipsoidea, glabra, calyce persistente involuta, 1·5 cm. longa.

Somaliland : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,050 m.. fls. yellowish red, fruits edible, 19 Oct., No. 4367 (type in Kew Herb.), Vernac.—*Dabolu.*

Astrochlaena malvacea Hall. f.—F.T.A. 4, 2 : 121.

Abyssinia : Mulkajibri, long. 42° 16′ E., lat. 9° 24′ N., 1,680 m., 1 m., corolla crimson, Feb., No. 5086.

Ipomoea Hardwickii (Spreng.) Hemsl. I. cardiosepala *Hochst.* ex Choisy—F.T.A. 4, 2 : 147.

Somaliland : Hargeisa, long. 44° E., lat. 9° 33′ N., 1,290 m., fls. pale purple, Sept., No. 3985. Vernac.—*Saar.*

I. cairica (L.) Sweet Hort. Brit. ed. 1, 287 (1827). I. palmata *Forssk.*—F.T.A. 4, 2 : 178.

Somaliland : Daraweina, long. 44° 8′ E., lat. 9° 40′ N., 1,140 m., climber, fls. pale mauve with purple centre, Oct., No. 4282.

I. cicatricosa Bak.—F.T.A. 4, 2 : 194.

Somaliland : Hargeisa, long. 44° E., lat. 9° 35′ N., 1,410 m., small shrubby plant, fls. purple, Sept., No. 4032. Vernac.—*Wahara wallis.*

I. Donaldsonii Rendle—F.T.A. 4, 2 : 194.

Somaliland : Boundary Pillar 99, long. 44° 39′ E., lat. 8° 37′ N., 1,140 m., small bush 0·5 m., fls. showy, white and purple, Oct., No. 4139. Vernac.—*Bulumbal.*—Endemic.

I. obscura Ker-Gawl—F.T.A. 4, 2 : 164.

Somaliland : Hargeisa, 1,290 m., fls. yellow, Sept., No. 4039.

I. tenuirostris Choisy—F.T.A. 4, 2 : 143.

Abyssinia : Fuyan Hunjuba, long. 42° 17′ E., lat. 9° 26′ N., 1,920 m., climber, fls. white, Feb., No. 5093 ; 5099.

Falkia oblonga Bernh.—F.T.A. 4, 2 : 65.

Abyssinia : Harar, long. 42° 6′ E., lat. 9° 18′ N., 1,950 m., fls. white with pink stripe, Feb., No. 5006.

Dichondra repens Forst.—F.T.A. 4, 2 : 65.

Abyssinia : Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,100 m., prostrate, fls. greenish, Mar., No. 5446.

Hildebrandtia sericea Hutch. et E. A. Bruce, sp. nov. affinis *H. somalensi* Engl., sed ramulis et foliis adpresse sericeis, floribus majoribus differt.

Suffrutex valde ramosus, usque ad 20 cm. altus, cortice brunneo ; rami longi sericei, breves pustuliformes et brevissimi, villosi. *Folia* fasciculata, oblanceolata, apice rotundata vel subacuta, ad basin attenuata, circiter 1 cm. longa et 3 mm. lata, adpresse cinereo-sericea. *Flores* dioici, ♂ tantum visi, subsessiles, albi ; calycis lobi 5, subaequales, ovati, acuti, circiter 2 mm. longi, extra sericei ; corolla circiter 8 mm. longa, tubo subcylindrico extra leviter pubescente, lobis late ovatis apice acutis extra pilosis circiter 3 mm. longis ; stamina subaequalia, 4, vix exserta, uno longiore ; antherae 2 mm. longae ; ovarii rudimentum hemisphericum, glabrum, stylis 2 staminibus brevioribus 4 mm. longis, stigmatibus lobulatis.

Somaliland : Boundary, long. 44° 15′ E., lat. 8° 58′ N., 1,260 m., shrublet 0·2 m., fls. white, 30 Sept., No. 4098 (type in Kew Herb.). Vernac.—*Mirrhu.*

H. somalensis Engl.—F.T.A. 4, 2 : 70.

Somaliland : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., sometimes climbing, Oct., No. 4156. Jebel Wotni, long. 45° 6′ E., lat. 10° 18′ N., 390 m., climbing in Acacia, fls. yellowish, Jan., No. 4799. Vernac.—*Daiyu.*

Hildebrandtia villosa Hutch. et E. A. Bruce, sp. nov., affinis *H. africanae* Vatke, sed pilis patulis dense villosa differt.

Suffrutex ramosus usque ad 20 cm. altus, cortice cinereo-albido, ramulis lateralibus gracilibus apice subspinescentibus; ramuli ultimi pustuliformes. *Folia* fasciculata, oblongo-oblanceolata, apice rotundata, basi angustata, 0·7–1 cm. longa, 2–3 mm. lata, pilis patulis dense et molliter villosa. *Flores* dioici, solitarii; ♂ breviter pedicellati: calycis lobi 4, inaequales, exteriores 2 multo majores, late elliptici, apice rotundati, 2 mm. longi, 1·5 mm. lati, pilosi, interiores 2 obovati, acute acuminati, 1·5 mm. longi; corolla pallide flava, vix 1 cm. longa, tubo infundibuliformi extra glabro, lobis late ovatis apice emarginatis et pilis brevibus ornatis 3 mm. longis; stamina inaequalia, longiora leviter exserta; antherae vix 2 mm. longae; ovarii rudimentum ovoideum. glabrum, stylis 2 filiformibus 1 cm. longis apice laciniatis. *Flores* ♀ pedicellis 8 mm. longis; calycis lobi valde inaequales, exteriores 2 decurrentes, suborbiculares, basi cuneati, 1 cm. longi, pilosi, interiores 2 minimi, transverse oblongo-elliptici, 1 mm. longi, fere glabri; corolla tubulosa, 8 mm. longa, lobis oblongis; staminum rudimenta parva; ovarium late ovoideum, 1·5 mm. longum, glabrum; styli 2, filiformes, longe laciniati.

Somaliland: Dubar, long. 45° 5′ E., lat. 10° 20′ N., 300 m., 20 cm., fls. pale yellow, bracts enlarged green, 2 Jan., No. 4770 (type in Kew Herb.); 4771; without locality, *Lort Phillips*. Vernac.—*Daiyu*.

Seddera arabica (Forssk.) Choisy—F.T.A. 4, 2: 76.

Somaliland: Boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,290 m., fls. white, Oct., No. 4111. Dobo Pass, long. 43° 15′ E., lat. 10° 15′ N., 1,140 m., 20 cm., fls. white, Feb., No. 4962.

Seddera cinerea Hutch. et E. A. Bruce, sp. nov. affinis *S. latifoliae* Hochst. et Steud., sed foliis plus minusve ovatis, floribus pedicellatis, corolla calyce longiore differt.

Suffrutex usque ad 30 cm. altus, basi lignosissimus; caules erecti, laxe foliati, molliter cinereo-tomentosi. *Folia* ovata vel ovato-rotundata, apice acuta vel rotundata, mucronata, basi rotundata, 1·8 cm. longa, 1·3 cm. lata, crassa, molliter cinereo-tomentosa, nervis lateralibus utrinsecus circiter 3 infra prominentibus; petioli circiter 3 mm. longi. *Flores* solitarii, axillares; pedicelli 2·5 mm. longi, medium versus bracteolis duabus subulatis instructi. *Calycis lobi* leviter inaequales, elliptico-lanceolati, acuti, usque ad 8 mm. longi, extra stellato-pubescentes. *Corolla* alba, fere 1 cm. longa; tubus anguste infundibuliformis, glaber, lobis ovato-triangularibus, extra adpresse pilosis. *Stamina* exserta, filamentis inferne bilobulatis. *Ovarium* ovoideum, apice pilosum; styli ad basin liberi, glabri, stigmatibus parvis capitatis.

Somaliland: Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,140 m., fls. white, 22 Oct., No. 4426 (type in Kew Herb.).

S. Hallieri Engl. & Pilger in Engl. Bot. Jahrb. 41: 294 (1908).

Somaliland: Hargeisa, long. 44° E., lat. 9° 33′ N., 1,290 m., fls. white, Sept., No. 3972.—Endemic.

S. latifolia Hochst. & Steud.—F.T.A. 4, 2 : 75.

SOMALILAND : Hargeisa, 1,440 m., fls. white, Sept., No. 3952. Vernac.—*Nagad.*

S. spinescens Peter—F.T.A. 4, 2 : 74.

SOMALILAND : near Dubar, long. 44° 5′ E., lat. 10° 20′ N., 120 m., fls. white, Jan., No. 4765.—Endemic.

Bonamia glomerata (Balf. f.) Hall. f. in Engl. Bot. Jahrb. 18 : 90 (1894). Breweria glomerata *Balf. f.*

SOMALILAND : Debrawen, long. 43° 10′ E., lat. 10° 5′ N., 1,020 m., prostrate, fls. pinkish, Feb., No. 4935.—Also in Socotra.

Cuscuta planiflora Ten.—F.T.A. 4, 2 : 203.

SOMALILAND : Hargeisa, long. 44° E., lat. 9° 35′ N., 1,380 m., fls. white, Oct., No. 4273.

ABYSSINIA : Gafra valley, long. 42° 13′ E., lat. 9° 21′ N., 1,500 m., fls. white, stems dark crimson, Feb., No. 5074.

SCROPHULARIACEAE.

Celsia keniensis Murb. in Lunds Univ. Årsskrift, n.f. 22, 1 : 70 (1925).

ABYSSINIA : Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,250 m., fls. yellow with crimson marks, Mar., No. 5461.—Also in Kenya.

Verbascum Schimperi Skan in F.T.A. 4, 2 : 280.

ABYSSINIA : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,340 m., shrub 3 m., fls. greenish, ripe fruit orange, Feb., No. 5125. Kondudo Mt., long. 42° 20′ E., lat. 9° 27′ N., 2,910 m., fls. yellow, No. 5225. Vernac.—*Timbolone.*

V. Ternacha Hochst. ex A. Rich.—F.T.A. 4, 2 : 279.

ABYSSINIA : Harar, long. 42° 6′ E., lat. 9° 18′ N., 1,920 m., 0·5 m., fls. yellow, Feb., No. 5012.

Anticharis linearis Hochst. ex Aschers.—F.T.A. 4, 2 : 276.

SOMALILAND : Slopes of Marmar range, long. 42° 47′ E., lat. 10° 29′ N., 1,050 m., plant viscid, fls. blue, Nov., No. 4657. Vernac.—*Dia tiri.*

Alectra asperrima Benth.—F.T.A. 4, 2 : 369.

SOMALILAND : Hargeisa, long. 44° E., lat. 9° 35′ N., fls. yellow, Oct., No. 4250.

A. parasitica A. Rich.—F.T.A. 4, 2 : 366.

SOMALILAND : Hargeisa, long. 44° 2′ E., lat. 9° 34′ N., 1,380 m., fls. yellow, stem purple, Oct., No. 4276.

Bartsia longiflora Hochst. ex Benth.—F.T.A. 4, 2 : 461.

ABYSSINIA : Kondudo mt., long. 42° 20′ E., lat. 9° 27′ N., 2,700 m., 1 m., viscid, fls. sulphur yellow with crimson veins, Feb., No. 5224.

B. Petitiana Hemsl.—F.T.A. 4, 2 : 460.

ABYSSINIA : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,880 m., fls. pink, Mar., No. 5322.

Cycnium erectum Rendle—F.T.A. 4, 2 : 434.

ABYSSINIA : Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,070 m., 1·5 m., fls. white fragrant, Mar., No. 5417.—Also in Somaliland.

Striga gesnerioides (Willd.)Vatke in Oest. Bot. Zeitschr. 1875 : 11. S. orobanchoides *Benth.*—F.T.A. 4, 2 : 402.

Somaliland : Hargeisa, long. 44° E., lat. 9° 33′ N., 1,380 m., fls. pale pink, Oct., No. 4253. Junction of tugs, long. 44° 18′ E., lat. 9° 57′ N., 810 m., fls. pink, Oct., No. 4347. Buramo, long. 43° 10′ E., lat. 10° N., 1,440 m., fls. pink, Dec., No. 4723. Buramo Warieto tug, long. 43° 10′ E., lat. 10° 2′ N., 1,080 m., Feb., No. 4918. Near Buramo, long. 43° 10′ E., lat. 10° N., 1,500 m., fls. pink, plant purplish green, Dec., No. 4722. Debrawen, long. 43° 10′ E., lat. 10° 5′ N., 1,020 m., fls. crimson, Feb., No. 4938. Vernac.—*Ara mudoweyi.*

Linaria hastata R. Br.—F.T.A. 4, 2 : 290.

Somaliland : Barataga, long. 44° 1′ E., lat. 10° 5′ N., 990 m., fls. yellow, Oct., No. 4525.

Schweinfurthia pedicellata Benth. & Hook. f. in Gen. Pl. 2 : 934 (1876).

Aden : 150 m., fls. pale purple, Mar., No. 5501.—Also in Socotra.

S. pterosperma A. Br.—F.T.A. 4, 2 : 293.

Somaliland : Las Dawan, long. 45° 12′ E., lat. 10° 20′ N., 180 m., annual, fls. pale lilac with yellow and purple markings, Jan., No. 4807.

Halleria lucida Linn.—F.T.A. 4, 2 : 295.

Abyssinia : Gara mulata Mt., long. 41° 45′ E., lat. 9° 15′ N., 2,490 m., bush 4 m., fls. red, Mar., No. 5376.

Lindenbergia sinaica Benth.—F.T.A. 4, 2 : 312.

Somaliland : Elmis, long. 44° 14′ E., lat. 10° 22′ N., 570 m., herb 20 cm., viscid, aromatic, fls. bright yellow with crimson, mottlings at throat, Oct., No. 4503. Ali Wein Mt., long. 45° 15′ E., lat. 10° 24′ N., 300 m., very aromatic, fls. yellow with red and purple markings, Jan., No. 4825. Aden : 300 m., fls. yellow, Mar., No. 5484. Vernac.—*Farahod.*

Craterostigma plantagineum Hochst.—F.T.A. 4, 2 : 329.

Somaliland : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., fls. white and blue with yellow centre, Oct., No. 4159. Sigib mt., long. 43° 11′ E., lat. 10° 19′ N., 1,470 m., fls. blue with white margins and yellow spots in throat, Feb., No. 4995.

Campylanthus junceus Edgw. in Journ. As. Soc. Beng. 16 : 1217 (1847).

Somaliland : Camp 4, long. 44° 16′ E., lat. 10° N., 1,080 m., fls. pale lilac, Oct., No. 4356. Dubriat Mt., long. 45° 10′ E., lat. 10° 22′ N., 150 m., slender twiggy shrub up to 2·5 m., fls. blue, Jan., No. 4775. Aden : 150–450 m., 1 m., fls. white, Mar., No. 5496. Vernac.—*Merho dabera.*—Known previously only from Aden.

Veronica abyssinica Fresen.—F.T.A. 4, 2 : 358.

Abyssinia : Harar-Gobelli Road, No. 5254. Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,520 m., prostrate, fls. sky-blue, Mar., No. 5289.

V. Anagallis-aquatica Linn.—F.T.A. 4, 2 : 357.

Abyssinia : Mulkajibri, long. 42° 16′ E., lat. 9° 24′ N., 1,620 m., fls. pale blue, Feb., No. 5078. Vernac.—*Mej. Gusnole.*

Orobanchaceae.

Cistanche Phelipaea (Linn.) Cout. Fl. Port. 571 ; F.W.T.A. 2 : 231. C. lutea *Hoffm. & Link*—F.T.A. 4, 2 : 463.

Somaliland : Hargeisa, long. 44° E., lat. 9° 33′ N., 1,290 m., fls. yellow, Oct., No. 4240. Near Buramo, long. 43° 10′ E., lat. 10° N., 1,500 m., fls. yellow, Nov., No. 4603. Vernac.—*Oro warraba ; Hablo bor.*

Orobanche cernua Loefl. var. *desertorum* Beck.—F.T.A. 4, 2 : 466.

Somaliland : Hargeisa, 1,290 m., fls. cream and violet, Sept., No. 3957. Buramo-Warieto tug, long. 43° 10′ E., lat. 10° 2′ N., 1,080 m., fls. white and purple, Feb., No. 4921. Vernac.—*Oro-waraba.*

Bignoniaceae.

Rhigozum somalense Hall. f.—F.T.A. 4, 2 : 532.

Somaliland : Afard, long. 44° 8′ E., lat. 10° 10′ N., 540 m., shrub 3 m., fls. yellow, Oct., No. 4455. Vernac.—*Binin.*—Endemic.

Pedaliaceae.

Pterodiscus undulatus Bak. f.—F.T.A. 4, 2 : 545.

Somaliland : Bir Dai, long. 44° 18′ E., lat. 9° 55′ N., 900 m., bare sand near tug, herb, fls. pink, Oct., No. 4334. Vernac.—*Burki māla.*—Endemic.

P. Wellbyi Stapf—F.T.A. 4, 2 : 544.

Somaliland : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., fls. dull red outside, yellowish within, Oct., No. 4220. Vernac.—*Burri Wey.*

Sesamothamnus Smithii Bak.—F.T.A. 4, 2 : 568.

Somaliland : Boundary Pillar 93, 990 m., shrub 3 m., fls. very handsome red and white, Oct., No. 4179. Vernac.—*Sulelma.*

Acanthaceae.*

Ruellia discifolia Oliv.—F.T.A. 5 : 47.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., fls. white opening at night, Sept., No. 3989. Vernac.—*Hābo.*—Endemic.

R. lineari-bracteolata Lindau—F.T.A. 5 : 47.

Somaliland : Camp 4, long. 44° 16′ E., lat. 10° N., 1,050 m., fls. pale lilac, Oct., No. 4364.—Endemic.

R. patula Jacq.—F.T.A. 5 : 45.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., in tree Acacia formation, fls. blue, Sept., No. 3943. Boundary, long. 44° 15′ E., lat. 8° 55′ N., 1,260 m., Sept., No. 4076. Ali Wein Mt., long. 45° 15′ E., lat. 10° 24′ N., 600–840 m., on limestone slopes, fls. purple, Jan., No. 4827. Vernac.—*Gāgāleh.*

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* Determinations by E. Milne-Redhead and Dr. Chiovenda.

Thunbergia Paulitschkeana Beck—F.T.A. 5 : 13.

ABYSSINIA : Harar, long. 42° 6′ E., lat. 9° 18′ N., 1,950 m., on limestone in open grass, prostrate herb, fls. bright yellow, Feb., No. 5022.—Endemic.

Dyschoriste fruticulosa (Rolfe) Chiov. Fl. Somala 249.

D. somalensis *Rendle*—F.T.A. 5 : 78.

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., on alluvium, fls. yellow, Sept., No. 4017. Vernac.—*Gāgāleh.*—Endemic.

Dyschoriste radicans Nees—F.T.A. 5 : 73.

ABYSSINIA : Harar, long. 42° 6′ E., lat. 9° 18′ N., 1,950 m., on limestone, prostrate herb, fls. blue, Feb., No. 5032.

Asystasia Coleae Rolfe—F.T.A. 5 : 135.

SOMALILAND : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,020 m., in tree-Acacia-grass community, fls. white, Oct., No. 4423 ; Buramo, long. 43° 10′ E., lat. 10° N., 1,260 m., on sandy bank, Jan., No. 4873 ; Abyssinia, S.W. of Fuyan Hunjuba, long. 42° 17′ E., lat. 9° 26′ N., 1,890 m., in waste places, prostrate, Feb., No. 5096.

A. parvula C.B.Cl.—F.T.A. 5 : 132.

SOMALILAND : Dobo Pass, long. 43° 15′ E., lat. 10° 15′ N., 1,200 m., on gneiss slopes, fls. white with crimson veins on lower lip, Feb., No. 4953.—Endemic.

Crossandra nilotica Oliv.—F.T.A. 5 : 115.

SOMALILAND : Biyu suldan, long. 43° E., lat. 10° 20′ N., 1,200 m., in ravine with *Ficus*, fls. purple, Dec., No. 4703.

C. spinosa Beck.—F.T.A. 5 : 114.

SOMALILAND : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 900 m., on rock slopes with Commiphora, fls. yellow, Oct., No. 4390 ; Debrawen, long. 43° 10′ E., lat. 10° 5′ N., on stony limestone hill, Feb., No. 4933.

Blepharis edulis (Forssk.) Pers.—F.T.A. 5 : 102.

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., dry ground, fls. blue, Sept., No. 4001. Vernac.—*Yamarug.*

B. fruticulosa C.B. Cl.—F.T.A. 5 : 99.

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., on stony sandstone slopes and drier alluvium, fls. blue, Sept., No. 4011. Vernac.—*Habag yamaru.*

B. linariifolia Pers.—F.T.A. 5 : 100.

ABYSSINIA : Haramaia-Harar Road, long. 42° 4′ E., lat. 9° 20′ N., 1,980 m., prostrate, fls. blue, Mar., No. 5474.

Acanthus eminens C.B. Cl.—F.T.A. 5 : 107.

ABYSSINIA : near Kofajalo, long. 41° 51′ E., lat. 9° 9′ N., 2,280 m., on limestone, by stream, 3 m. high, scandent, fls. deep blue, Mar., No. 5280.

Barleria acanthoides Vahl—F.T.A. 5 : 152.

SOMALILAND : between Duwi and Afard, long. 44° 10′ E., lat. 10° 8′ N., 720 m., on schist rocks, fls. pink, Oct., No. 4436. Jalelo, long. 44° 14′ E., lat. 9° 45′ N., 1,080 m., fls. white, Oct., No. 4298. Werawis valley, long. 43° 50′ E., lat. 10° 15′ N., 690 m., Nov., No. 4535.

B. diffusa (Oliv.) Lindau in Engl. & Prantl. Pfl. Fam. 4, 3B : 315.

Somaliland : Boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,260 m., in open places, flrs. pale blue, Sept., No. 4093. Vernac.—*Ged hared.*

B. eranthemoides R. Br. ex C.B. Cl.—F.T.A. 5 : 147.

Somaliland : Simodi, long. 43° 30′ E., lat. 10° 5′ N., 1,200 m., Nov., No. 4564. Abyssinia : Gafra Valley, long. 42° 13′ E., lat. 9° 21′ N., 1,500 m., on granite in deciduous scrub, fls. yellow, Feb., No. 5070. Vernac.—*Wana ad* (Somali).

B. Hildebrandtii S. Moore—F.T.A. 5 : 162.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., on drier alluvium, fls. blue, Sept., No. 4005. Long. 43° 16′ E., lat. 10° 5′ N., 1,140 m., 30 cm., fls. blue, Nov., No. 4598. Vernac.—*Habo.*—Endemic.

B. Hochstetteri Nees—F.T.A. 5 : 156.

Somaliland : long. 44° 8′ E., lat. 10° 10′ N., 510 m., fls. pale pink with crimson spot in throat, Oct., No. 4435. Kabri bahr, long. 43° 44′ E., lat. 10° 20′ N., 420 m., Nov., No. 4546.

B. parviflora R. Br. ex T. Anders.—F.T.A. 5 : 156.

Somaliland : Hargeisa, 1,290 m., on stony slopes, fls. pink, Sept., No. 3991 ; Duwi Pass, long. 44° 15′ E., lat. 10° 5′ N., 1,080 m., Oct., No. 4365.

B. proxima Lindau—F.T.A. 5 : 145.

Somaliland : Hargeisa, 1,290 m., on stony sandstone slopes, Oct., No. 3990 ; Boundary, long. 44° 39′ E., lat. 8° 47′ N., 1,140 m., in shade of trees, Oct., No. 4147. Vernac.—*Odon Tonleh Aran* ; *ad.*—Endemic.

Barleria (Prionitis) *punctata* Milne-Redhead, sp. nov. a *B. diacantha* Hochst. ex Nees foliis minoribus punctatis, bracteis haud dense pubescentibus, calycis segmentis minoribus obtusis glabris pruinosis facile distinguenda.

Planta fruticosa, spinosa ; rami dense ramulosi, nodos versus sparse strigosi, internodiis brevibus. *Folia* subsessilia, elliptica vel late oblanceolata, apice obtusa vel acuta, mucronata, basi attenuata, usque 2·5 cm. longa et 1·5 cm. lata, utrinque glabra sed margine et nervis parcissime adpresse strigosis, utrinque minute nigroglandulosopunctata et cystolithis inconspicuis dense instructa. *Spinae* axillares breviter stipitatae, radiis 2 vel interdum 3 usque 1·9 cm. longis albo-brunneis patentibus instructae. *Inflorescentiae* uniflorae, axillares, apicem versus ramulorum spicatim aggregatae ; bracteae inferiores foliis similes, superiores minores apice valde spinosae, basin versus plus minusve dense et conspicue peltato-glandulosae ; bracteolae minutae, anguste lanceolatae, acutae, haud spinosae, usque 2 mm. longae, glabrae, ciliatae, pruinosae. *Calycis segmenta* 4, valde imbricata, basin versus tubum brevem formantia, ovata vel late elliptica, circiter 4 mm. longa et 3 mm. lata, lateralia angustiora, omnia apice rotundata, extra inferne et medium versus sparse hirsuta, superne pruinosa, intus glabra. *Corolla* flava, circiter 3·2 cm. longa, bilabiata, glabra ; tubus cylindricus, inferne leviter ampliatus, circiter 1·5 cm. longus et 3 mm. diametro ; labium

posticum circiter 1·7 cm. longum, inferne tubiforme, superne expansum, 4- vel 3-lobatum ; lobi obovati, circiter 11 mm. longi et 9 mm. lati, apice rotundati, basi vix angustati ; labium anticum obovatum, apice rotundatum vel obscure 3-lobatum, basi angustatum, 1·4 cm. longum et 1·1 cm. latum. *Stamina* 2, filamentis anguste ligulatis minute puberulis, antheris dithecis circiter 4 mm. longis ; staminodia 2, filamentis filiformibus circiter 4 mm. longis, antheris valde redactis sterilibus. *Discus* cupularis, liber, margine irregulariter undulatus, circiter 1 mm. altus. *Ovarium* conicum, vix 4 mm. altum, glabrum ; stylus filiformis, circiter 2·8 cm. longus, glaber ; stigma cylindricum. *Capsula* disperma, rostrata, 1·7 cm. longa, glabra.

Somaliland : Barataga, long. 44° 1′ E., lat. 10° 5′ N., 1,290 m., 1 m., fls. yellow, 31 Oct., No. 4522 (type in Kew Herb.). Vernac.—*Aran ad.*

B. quadrispina Lindau—F.T.A. 5 : 147.

Somaliland : Hargeisa, 1,290 m., on stony sandstone slopes, fls. white, Sept., No. 3994. Vernac.—*Aran ad.*

B. somalensis Franch. in Révoil Çomali 51 (?).

Somaliland : Simodi, long. 43° 30′ E., lat. 10° 5′ N., 1,680 m., corolla-lobes sky blue, tube white, Nov., No. 4564.—Endemic.

B. ventricosa Hochst. ex Nees—F.T.A. 5 : 164.

Somaliland : Galla Pass, Feb., No. 5111a.

The following numbers of *Barleria* have not yet been determined, some being represented by rather imperfect material :—Nos. 4243, 4360, 4449, 4574, 4999, 5111.

Adhatoda Schimperiana Nees—F.T.A. 5 : 221.

Somaliland : Wobleh Mt., long. 43° 17′ E., lat. 10° 15′ N., 1,350 m., in tree Acacia open wood, fls. white, scrambling to 3 m., Nov., No. 4594. Abyssinia : Harar, long. 42° 10′ E., lat. 9° 20′ N., 1,650 m., on granite, ascending woody herb, corolla white, calyx and flowering bracts pale green, Feb., No. 5057.

Peristrophe bicalyculata (Retz.) Nees—F.T.A. 5 : 242.

Somaliland : Hargeisa, 1,290 m., in *Acacia-Zyzyphus*-grass community in moist places, fls. crimson, 0·5 m. high, Oct., No. 4236.

Isoglossa somalensis Lindau ?—F.T.A. 5 : 231.

Abyssinia : Galla Pass, long. 42° 19′ E., lat. 9° 25′ N., 2,280 m., in shaded gully by stream, fls. pinkish-white, Feb., No. 5198.

Dicliptera glanduligera Chiov., sp. nov. ; affinis *D. maculatae* (Hochst.) Nees, quae differt bracteis ellipticis obtusis ; bracteis spinulosis ad *D. micrantham* vergit.

Herba ramis semi-metralibus breviter densiuscule pubescentibus, internodiis 4–12 cm. longis 1·5–2 mm. crassis. *Folia* petiolata opposita ; petiolus gracilis, 7–18 mm. longus, puberulus ; laminae ovatae vel ovato-lanceolatae, basi rotundatae vel aliquantum cuneatae, apicem versus longe acuminatae, acutae, 6–7 cm. longae 3–3·7 cm. latae, membranaceae, supra intense virides, pilis parvis setulosis sparsae subtus pallidae paulo densius pilosae ; margines integerrimi, plani ; folia floralis regionis valde minora, petiolo

4–6 mm. longo, lamina ovato-lanceolata vel lanceolata usque lanceolato-lineari 0·6–3 cm. longa, 1–13 mm. lata. *Inflorescentiae* umbellatae, laxae, ex axillis superioribus orientes ; pedunculus 5–15 mm. longus, dense breviterque pilis simplicibus patulis et glandulis crebris flavescenti-pubescens ; spicularum uniflorarum pedicelli 4–8 mm. longi, flavido-glanduloso-pubescentes ; bracteae 2, oppositae, oblanceolatae, paullum inaequales, interior 8 mm. longa, exterior 10 mm. longa, 2·5–3·5 mm. latae, basi parum longiùs attenuatae, apice brevius acuminatae, spinuloso-cuspidatae, subcoriaceae, rigidulae, e basi manifeste trinerviae, nervis viridibus prope basin in colore albido per reliquas bracteas valde conspicuis, extra dense glandulis subsessilibus scabridae. *Calyx* dentibus 5, 4 subaequalibus 2 anticis et posticis cum intermedio breviore omnibus subulato-acuminatis, longioribus 6 mm. longis, breviore 5 mm. longo. *Corolla* pallide rosea, tubo cylindrico 7–8 mm. longo, apice 2 mm. diam. extus pilosulo ; labium superius ellipticum, 10–11 mm. longum, 5 mm. latum, apice obtusissimum integrum, dorso convexum, extra parce pilosulum ; inferius 11–12 mm. longum, 3 mm. latum, marginibus subparallelis, apice obtuse 3-dentatum. *Stamina* 2, filamentis 9 mm. longis, papilloso-pilosulis usque ad 1/2 superius ; antherae dithecae, thecis globosis 1 mm. circ. longis et latis, immediate superpositis. *Capsula* ovato-lanceolata, 7 mm. longa, 3 mm. lata, nervis dorsalibus 1 mm. circ. latis, marginibus membranaceis, extra pilosula, maturitate cum elasticitate aperiens, marginibus laceratis. *Semina* subrotunda, lenticularia, 2 mm. longa et lata, compresso-explanata, fusce flavescentia, nigro-punctulata.

Abyssinia : S.E. of Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,220 m., in *Juniperus-Podocarpus* forest, fls. crimson, 7 Mar., No. 5407 (type in Kew Herb.).

Dicliptera verticillata (Forssk.) C. Chr. in Dansk. Bot. Arkiv. 4, 3 : 11 (1922).

Somaliland : Buramo, long. 43° 10′ E., lat. 10° N., 1,470 m., fls. small, corolla tube white, lobes purplish, Dec., No. 4719.

Justicia aridicola Rendle—F.T.A. 5 : 193.

Somaliland : Hargeisa, 1,290 m., among aloes, fls. blue, 0·5 m. high, Sept., No. 3937 ; Debrawen, long. 42° 10′ E., lat. 10° 5′ N., 990 m., on limestone alluvium, Feb., No. 4929. Vernac.—*Habo.*

J. flava Vahl—F.T.A. 5 : 190.

Somaliland : Hargeisa, 1,290 m., in tree Acacia formation, fls. yellow, Sept., No. 3926.

Justicia Gillettii Chiov., sp. nov. (§Calophanoides), sepalis demum rigidis videtur insignis ; *J. Lazaru* S. Moore et *I. galeopsidi* T. And. vicinior.

Caules graciles elongati, internodiis 1·5–4·5 cm. longis, tetragonis, valde ramosis, ramis 13–20 cm. longis patentibus simplicibus vel iterum divisis, internodiis 1·5–2·5 cm. longis, ramulis 1·5–4 cm. longis internodiis abbreviatis. *Folia* opposita, caulina subsessilia vel sessilia, ovata vel ovato-lanceolata, 8–18 mm. longa 3–6 mm.

lata, supra intense viridia, sparse pilosula, in axillis foliorum floralium valde diminutorum ovato-lanceolatorum vel linearium 5–6 mm. longorum 1–1·5 mm. latorum obtusiusculorum fasciculata. *Calyx* 4·6–6 mm. longus, sepalis 5 aequalibus anguste linearibus sub anthesi viridibus tenuissime pilosulis, albo-marginulatis, post anthesin albicantibus glabris, basi 1·5 mm. latis, usque ad 1/4 vel 1/2 inferius post anthesin incrassatis, dorso rotundatis rigidis, supra sensim subulato-attenuatis acutissimis, erectis. *Corolla* rosea, tubo pallido cylindrico circ. 5 mm. longo, apice leviter dilatato, extra minute pilosulo ; labium superius circ. 3 mm. longum, ovatum, tubum continuans, apice vix brevissime bidentatum, longitudinaliter rubro-nervosum ; inferius circ. 5 mm. longum, 4 mm. latum, obtuse trilobum, supra glabrum, rubrum, subtus puberulum, pallidum. *Stamina* quam labium superius vix breviora, filamentis glabris. *Ovarium* glabrum, anguste lanceolatum, stylo glabro.

Somaliland : Boundary, 1,290 m., in *Acacia latronum* association, fls. crimson, 2 Oct., No. 4110 (type in Kew Herb.).

J. heterocarpa T. Anders.—F.T.A. 5 : 200.

Somaliland : Debrawen, long. 43° 10′ E., lat. 10° 5′ N., 990 m., on limestone alluvium, fls. pink, Feb., No. 4932.

J. Lortae Rendle—F.T.A. 5 : 201.

Somaliland : Boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,290 m., fls. yellow, Oct., No. 4121.

Justicia minutifolia Chiov. sp. nov. (§*Calophanoides*).

Fruticulus demissus, caulibus caespitosis e basi ramosissimis, longioribus humistratis, vetustioribus cortice pallide cinereo, fibroso-dilacerato ; rami floriferi 5–10 cm. longi, erecti, recti, rigidi, post mortem albidi usque candidi, apice subspinescentes ; internodia 0·3–2·5 cm. longa. *Folia* omnino parva, subsessilia, cum ramulis abbreviatis subfasciculata ; petiolus 0·5–0·7 mm. longus ; lamina lineari-obovata, vel lineari-oblanceolata, 3–6 mm. longa, 1–2 mm. lata, utrinque attenuata, basi saepius magis, apice obtusa vel rotundata, sicco viridi-cinerascens, utrinque pilis densiusculis brevissimis subsericeis adpressis canescens, costa sola subtus prominula, nervi et venae omnino evanidi. *Flores* axillares, solitarii, subsessiles. *Calyx* 4 mm. longus ; tubus brevissimus, vix 0·5 mm. longus ; sepala linearia 3·5 mm. longa, basi 1 mm. lata, apice acuta, extra adpresse cinereo-puberula. *Corolla* 8 mm. longa, intus rubra, extra pallida, puberula, tubo 5 mm. longo, sensim sursum ampliato ; labia subaequilonga, 3 mm. longa ; superius ovatum, apice emarginatum ; inferius rotundato-ovatum, obtuse trilobum. *Ovarium* lanceolatum, densiuscule pilosum ; stylus filiformis, 8 mm. longus, basi pilosulus, superne glaber. *Capsula* lanceolata, 6 mm. longa, 1·2–2 mm. lata et spissa, obtuse tetragona, pilis brevissimis undique sparsa. *Semina* 1 pro loculo, subrotunda, 2 mm. circ. diam., corrugata.

Somaliland : Boundary, long. 40° 10′ E., lat. 8° 57′ N., 1,260 m., on limestone in deep red soil, 29 Sept., No. 4079A (type in Kew Herb.).

Justicia scabrula Chiov. sp. nov. (§*Calophanoides*); affinis *J. Phillipsiae* Rendle foliis nigricantibus scaberulis obovatis vel oblanceolatis obtusissimis calycibus brevioribus differt.

Fruticulus ramosissimus, ramis vetustis lignosis cortice pallide cinereo tectis, junioribus dense pilis minutissimis adpressis canescentibus; caulium internodia 2·5–4·5 cm. longa, ramorum et ramulorum floriferorum 5–15 mm. longa. *Folia* sicco nigricantia; petiolus 0·5–1 mm. longus; laminae anguste obovatae vel oblanceolatae, basi cuneatim angustatae, apice rotundae vel obtusae, 3–10 mm. longae, 2–4, 5 mm. latae, utrinque densiuscule papillososcaberulae, caeterum glabratae, crassiusculae, rigidulae, nervis obsoletis, costa sola subtus prominente supra vix sensibili. *Flores* in axillis solitarii; pedicellus 1–1·5 mm. longus, pilosiusculus. *Calyx* 4 mm. longus, farinulente pilosulus, tubo campanulato 1 mm. circ. longo, 2·5 mm. lato; sepala 5, linearia, 3 mm. longa, e basi 0·5–0·7 mm. lata sensim angustata, apice acuta. *Corolla* rosea, tubo cylindrico 6 mm. longo 1·5 mm. diam. lato albido extra minute puberulo; labium superius tubum continuans 5 mm. longum, apice breviter obtuse bilobulatum, extra puberulum; labium inferius obovatum 6 mm. longum, apice 5 mm. latum, profundiuscule 3-lobatum, lobis 1·5–2 mm. longis obtusis, supra sparse pilosum. *Stamina* cum antherarum apicibus labii superioris summitatem aequantia, filamentis 3–5 mm. longis glabris; antheris cum theca inferiore obtuse breviterque caudata. *Ovarium* lanceolatum, 2–2·5 mm. longum, acuminatum, glabrum; stylus filiformis, 7–8 mm. longus, usque ad medium vel infra hirtellus.

Somaliland: Buramo-Dumuk tug, long. 43° 12′ E., lat. 10° 1′ N., 1,260 m., in gneiss gorge with permanent stream, 0·5 m. high, fls. pink and crimson, 29 Jan., No. 4881 (type in Kew Herb.).

J. uncinulata Oliv.—F.T.A. 5: 210.

Somaliland: Dobo Pass, long. 43° 15′ E., lat. 10° 15′ N., 1,200 m., on gneiss hills, prostrate, rooting at the nodes, fls. white spotted with crimson, Feb., No. 4958.

The following numbers of *Justicia* have not been determined:—4038; 4078; 4079; 4116; 4315; 4351; 4673; 4801.

Monechma debile (Forssk.) Nees in DC. Prod. 11: 411.

M. bracteatum *Hochst.*—F.T.A. 5: 214.

Somaliland: Buramo, Warieto tug, long. 43° 10′ E., lat. 10° 2′ N., 1,080 m., in bare damp stony stream bed, fls. pale crimson, Feb., No. 4924. Buramo, long. 43° 10′ E., lat. 10° N., 1,470 m., fls. white and crimson, Dec., No. 4720.

Monechma troglodytica Chiov. sp. nov. videtur proxima *M. varianti* C. B. Clarke.

Herba annua, caulibus usque ad 20 et amplius cm. longis, pluribus, caespitosis, inferne induratis, geniculato-adscendentibus, e basi ramosis, obtuse tetragonis, pilis minutissimis reflexis puberulis. *Folia* sessilia, sicco viridi-fuscescentia; lamina oblanceolata, basi longiuscule attenuata, apice rotundata vel leviter contracta, obtusa, 8–20 mm. longa, 2–6 mm. lata, crassula, sicco rigidula, nervis

evanidis, costa subtus vix prominula flavescente, omnes utrinque etiam floriferae caeteris multo minores omnino glabrae. *Flores* in axillis ramulorum superioribus 5–6 foliorum diminutorum, pulverulento-puberulorum, internodiis inferioribus 10–15 mm. longis, superioribus brevioribus separatis dispositi, racemos laxos formantes ; pedicelli brevissimi vel subnulli. *Calyx* 4 mm. longus, sepalis linearibus, basi brevissime coalitis, 0·5 mm. latis, apice sensim subulato-attenuatis, brevissime denseque albo-ciliolatis. *Corolla* rosea, extra minute pilosula ; tubus pallidus, 5 mm. longus ; labium superius tubum continuans 2 mm. longum, apice emarginulatum ; inferius obovatum 5 mm. longum, 4 mm. latum, apice lobis tribus rotundatis incisum. *Ovarium* lanceolatum, minute pilosum ; stylus filiformis 7·5 mm. longus, basi pilosiusculus. *Capsula* obovata, 4 mm. longa, 3 mm. lata, basi in stipitem 2 mm. longam angustata, apice acuta, minutissime pilosula. *Semina* glaberrima, 1 pro loculo, lenticularia, 3 mm. diam. lata, 1 mm. spissa, laevia, nitida, flavescentia.

SOMALILAND : Hargeisa, 1,350 m., on sandstone rocks, fls. crimson, 13 Oct., No. 4255 (type in Kew Herb.).

Hypoëstes antennifera S. Moore—F.T.A. 5 : 245.

ABYSSINIA : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,250 m., 1 m. high, fls. white, Feb., No. 5119.

H. Hildebrandtii Lindau—F.T.A. 5 : 249.

SOMALILAND : Hargeisa, 1,290 m., in tree Acacia formation, fls. white with mauve markings, Sept., No. 3906. Vernac.—*Ged Waraba*.—Also in Eritrea.

H. triflora (Forssk.) Roem. & Schultes—F.T.A. 5 : 247.

ABYSSINIA : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,460 m., on close grazed grass, fls. pink streaked with crimson, Feb., No. 5162.

H. verticillaris (Linn. f.) R. Br.—F.T.A. 5 : 250.

ABYSSINIA : Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,130 m., Mar., No. 5424.

Ecbolium Anisacanthus (Schweinf.) C.B. Cl.—F.T.A. 5 : 238.

SOMALILAND : Hargeisa, 1,290 m., in open places on level ground, fls. blue, Sept., No. 3944. Camp 4, long. 44° 16′ E., lat. 10° N., 1,050 m., fls. bright blue, Oct., No. 4362. Between Duwi and Afard, long. 44° 10′ E., lat. 10° 8′ N., 720 m., Oct., No. 4437.

Ecbolium gymnostachyum (Nees) Milne-Redhead, comb. nov. Justicia gymnostachya *Nees* in DC. Prodr. 11 : 426 (1847). E. parvibracteatum *Rendle*—F.T.A. 5 : 237.

SOMALILAND : Hargeisa, 1,380 m., on sandstone rocks, 2 m. high, fls. dull blue, Oct., No. 4254.—Endemic.

E. viride (Forssk.) Alston Fl. Ceylon 6 : Suppl. 229 (1921).

SOMALILAND : Burmado, long. 43° 50′ E., lat. 10° 13′ N., 600 m., 30 cm., fls. green, Nov., No. 5436. Vernac.—*Alen medu*.

Lepidagathis scariosa Nees—F.T.A. 5 : 122.

SOMALILAND : Boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,290 m., fls. blue, Oct., No. 4119.

Satanocrater somalensis (Lindau) Lindau—F.T.A. 5 : 69.

Somaliland : Afard, long. 44° 8′ E., lat. 10° 10′ N., 510 m., fls. mauve, Oct., No. 4483. Vernac.—*Elas.*—Endemic.

Ruttya fruticosa Lindau—F.T.A. 5 : 175.

Somaliland : Goton, long. 42° 50′ E., lat. 10° 9′ N., 1,500 m., shrub 1·5 m., Nov., No. 4635. Mt. Wobleh, long. 43° 17′ E., lat. 10° 15′ N., 1,350 m., shrub 3 m., fls. orange-red with black markings, Feb., No. 4982. Buramo, long. 43° 12′ E., lat. 10° 1′ N., 1,200 m., shrub 2 m., fls. orange, Jan., No. 4883. Vernac.—*Elas.*

Selaginaceae.

Hebenstreitia dentata L.—F.T.A. 5 : 265.

Abyssinia : Mulkajibri, long. 42° 16′ E., lat. 9° 24′ N., 1,770 m., fls. white with orange marking, Feb., No. 5090.

Verbenaceae.

Lantana microphylla Franch. Sert. Somal. 49 (1882).

Somaliland : Duwi Pass, long. 44° 15′ E., lat. 10° 15′ N., 1,050 m., fls. white, very aromatic, Oct., No. 4373.—Endemic.

L. Petitiana A. Rich.—F.T.A. 5 : 277.

Somaliland : Boundary, No. 4123. Afard, long. 44° 8′ E., lat. 10° 10′ N., 690 m., 0·3 m., fls. white, aromatic, Oct., No. 4446. Vernac.—*Ged hamer.*

L. salvifolia Jacq.—F.T.A. 5 : 276.

Abyssinia : Yuka, long. 41° 40′ E., lat. 9° 27′ N., 1,680 m., 1·5 m., fls. white, Mar., No. 5458. Kolubi-Harar Road, long. 41° 50′ E., lat. 9° 25′ N., 2,100 m., 1 m., fls. pink, leaves aromatic, Mar., No. 5463. Vernac.—*Kasi.*

Lippia nodiflora (Linn.) A. Rich.—F.T.A. 5 : 279.

Somaliland : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 870 m., fls. lilac, Oct., No. 4394.

Abyssinia : Haramaia, long. 42° E., lat. 9° 24′ N., 1,980 m., prostrate, fls. pinkish, Mar., No. 5465.

Chascanum africanum Moldenke in Fedde Repert. 45 : 136 (1938).

Somaliland : Barataga, long. 44° 1′ E., lat. 10° 5′ N., 1,290 m., 1 m., fls. cream, Oct., No. 4518. Gorfulai, long. 43° 38′ E., lat. 10° 16′ N., 480 m., 1 m., fls. pale yellow, Nov., No. 4550. Debrawen, long. 43° 10′ E., lat. 10° 5′ N., 1,020 m., Feb., No. 4934. Vernac.—*Ubolōlu.*

C. sessilifolia (Vatke) Moldenke in Phytologia 1 : 18 (1933). Bouchea sessilifolia *Vatke*—F.T.A. 5 : 283.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., fls. white, Sept., No. 3992.—Endemic.

Priva adhaerens (Forssk.) Chiov. in Bull. Soc. Bot. Ital. 1923 : 115. P. leptostachya *Juss.*—F.T.A. 5 : 285.

Somaliland : Buramo, long. 43° 10′ E., lat. 10° N., 1,620 m., 30 cm., fls. white with crimson marks, Jan., No. 4851. Mt. Wobleh, long. 43° 17′ E., lat. 10° 15′ N., 1,260 m., fls. white and crimson, Feb., No. 4991.

Verbena officinalis Linn.—F.T.A. 5 : 286.

Somaliland : Buramo, 1,470 m., 1 m., fls. purple, Dec., No. 4721.

Premna resinosa Schauer—F.T.A. 5 : 289.

Somaliland : Near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., 960 m., shrub 2 m., fls. cream, leaves very aromatic, berries edible, Oct., No. 4313. Vernac.—*Jero.*

P. somaliensis Bak.—F.T.A. 5 : 289.

Somaliland : Buramo, long. 43° 10′ E., lat. 10° N., 1,500 m., shrub 1 m., fls. white and green, leaves aromatic, Jan., No. 4858.—Endemic.

P. viburnoides A. Rich.—F.T.A. 5 : 292.

Somaliland : Jifa Meidir, long. 43° 15′ E., lat. 9° 43′ N., 1,740 m., shrub 3 m., fls. greenish-cream, Jan., No. 4865.

Abyssinia : Harar, long. 42° 6′ E., lat. 9° 18′ N., 1,950 m., shrub 1 m., leaves aromatic, Feb., No. 5010. Vernac.—*Hadad.*

Clerodendrum myricoides (Hochst.) R. Br. ex Vatke—F.T.A. 5 : 310.

Somaliland : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,110–1,200 m., shrub 2 m., fls. blue, Oct., No. 4404.

Abyssinia : Fuyan Hunjuba, long. 42° 17′ E., lat. 9° 26′ N., 1,920 m., shrub 2 m., fls. blue, Feb., No. 5100. Vernac.—*Marari* (Somali) ; *Muserich* (Abyss.).

Cyclocheilon eriantherum (Vatke) Engl.—F.T.A. 5 : 274.

Somaliland : Afard, long 44° 8′ E., lat. 10° 10′ N., 690 m., shrub 1 m., fls. pale pink, Oct., No. 4474. Dubar, long 45° 5′ E., lat. 10° 20′ N., 300 m., shrublet 0·5 m., bracts pale green, fls. pink, Jan., No. 4772. Vernac.—*Hanja aseyi* ; *Dainya.*

C. somalense Oliv.—F.T.A. 5 : 274.

Somaliland : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., fls. pale pink, Oct., No. 4170. Also in Abyssinia.

Labiatae.

Micromeria biflora Benth.—F.T.A. 5 : 452.

Somaliland : Simodi, long. 43° 30′ E., lat. 10° 5′ N., 1,740 m., fls. white, Nov., No. 4576.

Abyssinia : Harar, long. 42° 6′ E., lat. 9° 18′ N., 1,890 m., fls. pale pink, Feb., No. 5014. Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 3,000 m., fls. pink, Mar., No. 5319. Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,400 m., fls. pink, Mar., No. 5406.

Thymus Serpyllum Linn.—F.T.A. 5 : 454.

Abyssinia : Gara mulata Mt., 3,000 m., prostrate, fls. pink, Mar., No. 5318.

Stachys aculeolata Hook. f.—F.T.A. 5 : 466.

Abyssinia : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,580 m., fls. pink with crimson markings, Dec., No. 5353.

Stachys glandulosa Hutch. et E. A. Bruce, sp. nov., *S. aegyptiacae* Fres. remote affinis, sed fere glabra, foliis dimidio superiore denticulatis differt.

Suffrutex ad 20 cm. altus, valde aromaticus et ramosus ; ramuli lignosi, basi 2–3 mm. diametro, glabrescentes, hornotini stellato-tomentelli, internodiis 1·5–2·5 cm. longis. *Folia* breviter petiolata, petiolo circiter 2 mm. longo stellato-tomentello ; lamina anguste oblongo-lanceolata, basi cuneata, apice acuta, 1·5–3 cm. longa, 3–6 mm. lata, parte superiore denticulata, supra indistincte, infra dense glandulosa et nervis stellato-tomentellis ; nervi laterales utrinsecus circiter 3, supra impressi, infra prominentes. *Verticilli* 2–6-flori, subsessiles ; bracteae ovato-lanceolatae, 5–9 mm. longae, circiter 2·5 mm. latae, infra stellato-tomentellae, supra glabrae. *Calyx* anguste campanulatus, 10-nervius, 5-dentatus, extra glandulosus et stellato-tomentellus, dentibus deltoideis acutis 1·5 mm. longis, tubo 4 mm. longo fauce 3 mm. diametro. *Corolla* rosea, labio inferiore carmineo-maculata, extra stellato-tomentella, tubo cylindrico circiter 6 mm. longo calyci subaequali, labio superiore obovato 2·5 mm. longo, labio inferiore 3-fido 5 mm. longo lobo medio maximo semiorbiculari 2 mm. longo obtuso. *Stamina* inclusa. *Stylus* breviter 2-fidus. *Nuculae* ovoideae.

SOMALILAND : Jifa meidir, long. 43° 15′ E., lat. 9° 43′ N., 1,740 m., on granite kopje in evergreen scrub, 24 Jan. No. 4866 (type in Kew Herb.).

S. Hildebrandtii Vatke—F.T.A. 5 : 468.

SOMALILAND : Wabwanak Park, Libah Hele Mts., long. 43° E., lat. 10° 20′ N., 1,770 m., 1 m., Dec., No. 4,710.

Nepeta azurea R. Br.—F.T.A. 5 : 460.

ABYSSINIA : Galla Pass, 2,250 m., 1 m., aromatic, fls. dark blue, Feb., No. 5120.

N. Petitiana Bak.—F.T.A. 5 : 460.

ABYSSINIA : Gara mulata Mt., 2,790 m., 2 m., fls. blue, Mar., No. 5328.—Endemic.

Leucas Jamesii Bak.—F.T.A. 5 : 478.

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., 0·5 m., fls. white, Sept., No. 3928. Jalelo, long. 44° 14′ E., lat. 9° 45′ N., 1,080 m., 1 m., fls. white, Oct., No. 4293. Gorfulai, long. 43° 38′ E., lat. 10° 16′ N., 480 m., fls. white, Nov., No. 4554.—Endemic.

L. thymoides Bak.—F.T.A. 5 : 482.

SOMALILAND : Boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,290 m., fls. white, Nov., No. 4113. Simodi, long. 43° 30′ E., lat. 10° 5′ N., 1,200–1,740 m., fls. white, Nov., No. 4563. Buramo, long 43° 10′ E., lat. 10° N., 1,500 m., fls. white, Jan., No. 4860.—Endemic.

L. urticifolia R. Br.—F.T.A. 5 : 489.

SOMALILAND : Hargeisa, No. 3905. Buramo, Warieto tug, long. 43° 10′ E., lat. 10° 2′ N., 1,080 m., fls. white, Feb., No. 4922.

Lasiocorys argyrophylla Vatke—F.T.A. 5 : 471.

Somaliland : Boundary, long. 44° 15′ E., lat. 8° 58′ N., 1,260 m., fls. and leaves white, Sept., No. 4103. Debrawein, long. 43° 15′ E., lat. 10° 3′ N., 1,140 m., 2 m., woody with slender branches, fls. white, Nov., No. 4600. Vernac.—*Bukoro ari*.—Endemic.

Ballota fruticosa Bak.—F.T.A. 5 : 472.

Somaliland : Libah Hele Mt., long. 43° E., lat. 10° 20′ N., 1,560–1,790 m., shrub 3 m., fls. white, 3 Dec., No. 4694. –Endemic.

Leonotis velutina Fenzl var. *rugosa* Bak.—F.T.A. 5 : 492.

Abyssinia : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,520 m., 2 m., fls. orange, Feb., No. 5157.

Calamintha simensis Benth.—F.T.A. 5 : 455.

Abyssinia : Gara mulata Mt., 2,880 m., fls. pinkish, Mar., No. 5360 ; 5361.

Ocimum americanum Linn. Cent. Pl. 1 : 15 (1755). *O. canum* Sims—F.T.A. 5 : 337.

Somaliland : Debrawen, long. 43° 10′ E., lat. 10° 5′ N., 990 m., aromatic, fls. cream, Feb., No. 4931.

O. hadiense Forssk. Fl. Aegypt-Arab. 109 (1775). O. menthaefolium *Hochst.*—F.T.A. 5 : 340.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., shrublet, 0·5 m., very aromatic, fls. white, Sept., No. 3909. Deriodera, long. 42° 55′ E., lat. 10° 3′ N., 1,170 m., aromatic, fls. white, lilac-tinged, Nov., No. 4641. Vernac.—*Hibag* ; *Hrida*.

O. staminosum Bak.—F.T.A. 5 : 347.

Somaliland : Debrawen, long. 43° 10′ E., lat. 10° 5′ N., 990 m., very aromatic, fls. white, lilac-tinged, Feb., No. 4940.—Endemic.

O. suave Willd.—F.T.A. 5 : 338.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,890 m., 0·5 m., fls. white, Sept., No. 3927. Buramo, Dumuk tug, long. 43° 12′ E., lat. 10° N., 1,170 m., 1 m., fls. cream, Jan., No. 4890.

O. tomentosum Oliv.—F.T.A. 5 : 341.

Somaliland : Hargeisa, 1,290 m., 25 cm., fls. greenish cream, Sept., No. 4037.—Endemic.

Becium obovatum (Vatke) N.E. Br. var. *hians* N.E. Br.

Abyssinia : Harar, long. 42° 6′ E., lat. 9° 18′ N., 1,950 m., fls. white and crimson, Feb., No. 5009.

B. knyanum (Vatke) N.E. Br. ex Broun & Massey Fl. Pl. Sudan 357 (1929).

Somaliland : Boundary, long. 43° 54′ E., lat. 9° 2′ N., 1,350 m., herb 30 cm., fls. white, Oct., No. 4229.

Orthosiphon pallidus Royle—F.T.A. 5 : 369.

Somaliland : Buramo, Dumuk tug, long. 43° 10′ E., lat. 10° N., 1,260 m., fls. white, Jan., No. 4878.

O. somalensis Vatke—F.T.A. 5 : 372.

Abyssinia : Yuka, long. 41° 40′ E., lat. 9° 27′ N., 1,650 m., fls. pink, Mar., No. 5457.—Also in Somaliland.

Endostemon tenuiflorus (Benth.) Ashby in Journ. Bot. 1936 : 125. O. tenuiflorus *Benth.*—F.T.A. 5 : 366.

Somaliland : Ali Wein Mt., long. 45° 15′ E., lat. 10° 24′ N., 510 m., fls. white, lilac tinged, aromatic, Jan., No. 4819. Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,380 m., fls. white, mauve tinged, Oct., No. 4275. Vernac.—*Ged Laben.*—Also in Socotra and Arabia.

Coleus albidus Vatke in Linnaea 37 : 321 (1871–73).

Somaliland : Mt. Wobleh, long. 43° 17′ E., lat. 10° 15′ N., 1,620 m., fls. blue, Feb., No. 4988.—Also in Abyssinia.

C. barbatus Benth.—F.T.A. 5 : 429.

Somaliland : Simodi, long. 43° 30′ E., lat. 10° 5′ N., 1,350–1,740 m., bushy herb 0·5 m., fls. blue, Nov., No. 4573. Vernac.—*Mtera had.*

Coleus cicatricosus Hutch. et E. A. Bruce, sp. nov. aspectu *C. Dazo* A. Chev., sed foliis cordatis crasse dentatis, inflorescentiis longe pilosis valde distincta.

Herba aromatica, viscida, usque ad 1 m. alta ; caulis crassus, glanduloso-tomentosus et longe pilosus, cicatricibus petiolorum disciformibus 4–5 mm. diametro notatus. *Folia* ovato-rotundata, basi profunde cordata, apice subacuta, 4–6 cm. diametro, crasse dentata, dentibus obtusis, utrinque molliter et patule pubescentia ; petioli 2–3 cm. longi, pubescentes. *Inflorescentia* paniculata, oblonga, usque ad 30 cm. longa, axi crasso longe piloso, ramis lateralibus racemiformibus 4–5 cm. longis basi cicatricibus petiolorum notatis ; pedicelli patentes, 1–3 fasciculati, fere 1 cm. longi, breviter glanduloso-pubescentes. *Calyx* 8 mm. longus, glanduloso-puberulus, lobis inferioribus subulato-lanceolatis 3·5 mm. longis, lateralibus oblique ovatis acuminatis 2·5 mm. longis, lobo superiore late elliptico 4 mm. longo obtuso. *Corolla* atro-caerulea ; tubus medio geniculatus, vix 1 cm. longus ; labium adaxiale 4 mm. longum, leviter 3-lobatum, abaxiale cymbaeforme circiter 8 mm. longum. *Stamina* leviter exserta, filamentis inferne connatis. *Nuculae* lenticulares, brunneae, 1·25 mm. diametro.

Somaliland : Buramo, Dumuk tug, long. 43° 12′ E., lat. 10° 1′ N., 1,260 m., 1 m., plant aromatic, viscid, fls. dark blue, 29 Jan., No. 4880 (type in Kew Herb.). Vernac.—*Dalol.*

C. edulis Vatke—F.T.A. 5 : 425.

Abyssinia : Harar, long. 42° 19′ E., lat. 9° 28′ N., 2,280 m., fls. blue, Feb., No. 5203.

C. igniarius Schweinf.—F.T.A. 5 : 435.

Somaliland : Elmis, long. 44° 14′ E., lat. 10° 22′ N., 600 m., shrub 1 m., fls. rich blue, Oct., No. 4505. Auboba, long. 43° E., lat. 10° 1′ N., 1,650 m., 0·5 m., very aromatic, Nov., No. 4631. Vernac.—*Dalol.*

C. lanuginosus Hochst.—F.T.A. 5 : 429.

Somaliland : Birda Mt., long. 43° E., lat. 10° 20′ N., 1,620 m., fls. purplish blue, Nov., No. 4676.

Abyssinia : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,700 m., fls. purple, Mar., No. 5304 ; 5348.

C. spicatus Benth. in DC. Prodr. 12 : 71 (1848).

SOMALILAND : Simodi, 1,740 m., 0·3 m., fls. purple, stems reddish, Nov., No. 4575. Vernac.—*Mtera.*

Capitanya otostegioides Guerke—F.T.A. 5 : 446.

SOMALILAND : Hargeisa, long. 44° E., lat. 9° 34′ N., 1,290 m., succulent, fls. purple, Sept., No. 3995.

Salvia Hochstetteri Bak.—F.T.A. 5 : 459.

ABYSSINIA : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,280 m., fls. blue, Feb., No. 5118.

S. nudicaulis Vahl var. *nubia* Bak.—F.T.A. 5 : 458.

ABYSSINIA : Gara mulata Mt., 2,820 m., fls. pale blue, Mar., No. 5329.

Otostegia integrifolia Benth.—F.T.A. 5 : 494.

ABYSSINIA : Kofajalo, long. 41° 51′ E., lat. 9° 9′ N., 2,250 m., 3 m., fls. white and yellow, Mar., No. 5277.—Also in Eritrea.

O. repanda Benth.—F.T.A. 5 : 495.

ABYSSINIA : Mulkajibri, long. 42° 16′ E., lat. 9° 24′ N., 1,650 m., 2 m., fls. white, aromatic, Feb., No. 5085. Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,640 m., 2 m., fls. white, Mar., No. 5341.

Ajuga remota Benth. in Wall. Pl. Asiat. Rar. 1 : 59 (1830).

ABYSSINIA : Galla Pass, long. 42° 19′ E., lat. 9° 28′ N., 2,250 m., fls. blue, Feb., No. 5117.

Monocotyledones.

POTAMOGETONACEAE.

Potamogeton nodosus Poir. Encycl. Suppl. 4 : 535 (1816).

ABYSSINIA : Haramaia, long. 42° E., lat. 9° 24′ N., 1,980 m., fls. dull yellow, Mar., No. 5471.

P. pectinatus L.—F.T.A. 8 : 223.

ABYSSINIA : Haramaia, 1,980 m., fls. reddish, Mar., No. 5467.

COMMELINACEAE.

Commelina albescens Hassk.—F.T.A. 8 : 57.

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., fls. pale blue, Sept., No. 3982. Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., fls. pale blue, Oct., No. 4189. Jebel Dubur, long. 44° 16′ E., lat. 10° N., 1,050 m., fls. small white, Oct., No. 4359. Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,110–1,200 m., fls. purplish blue, Oct., No. 4400. Vernac.—*Bar.*

C. benghalensis Linn.—F.T.A. 8 : 41.

SOMALILAND : Duwi, 1,140 m., fls. sky blue, Oct., No. 4402. Vernac.—*Bar.*

C. Forskalaei Vahl—F.T.A. 8 : 44.

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., prostrate, fls. bright blue, Sept., No. 4046.

ABYSSINIA : Harar, long. 42° 10′ E., lat. 9° 20′ N., 1,650 m., fls. blue, Feb., No. 5054. Vernac.—*Bar* (Somali). *Gorla gabis* (Abyss.).

C. Kotschyi Hassk.—F.T.A. 8 : 49.

Abyssinia : Harar, long. 42° 10′ E., lat. 9° 20′ N., 1,650 m., fls. blue, Feb., No. 5053. Vernac.—*Gorla gabis.*

Cyanotis somaliensis C.B. Cl.—F.T.A. 8 : 83.

Somaliland : Buramo, long. 43° 10′ E., lat. 10° N., 1,740 m., fls. purplish blue, Jan., No. 4847. Vernac.—*Bar.*

Liliaceae.

Anthericum inconspicuum Bak.—F.T.A. 7 : 480.

Somaliland : Debrawen, long. 43° 10′ E., lat. 10° 5′ N., 1,020 m., fls. yellowish green, Feb., No. 4936.—Endemic.

Chlorophytum tordense Chiov. Result. Sc. Miss. Stefan.-Paoli Somal. Ital. 1 : 173 (1916).

Somaliland : Sigib Mt., long. 43° 11′ E., lat. 10° 19′ N., 1,470 m., leaves succulent, fls. white, purple tinged with brown stripe, Feb., No. 4996.—Endemic.

Aloe abyssinica Lam.—F.T.A. 7 : 467.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,320 m., up to 2 m., growing in clumps, fls. yellow, red or orange, Sept., No. 3902. Vernac.—*Da-ar. Gabar.*

A. aethiopica Berger in Engl. Bot. Jahrb. 36 : 60 (1905).

Abyssinia : Yuka, long. 41° 40′ E., lat. 9° 25′ N., 1,950 m., leaves mottled, fls. red, Mar., No. 5418.—Endemic.

A. Rivae Bak.—F.T.A. 7 : 465.

Somaliland : long. 43° 16′ E., lat. 10° 5′ N., 1,040–1,140 m., slender stem up to 3 m., leaves bluish, margins white, fls. yellow sometimes pink, Nov., No. 4597. Vernac.—*Daar Burug.*—Endemic.

A. somaliensis C. H. Wright in Gard. Chron. 1899 : 430.

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 35′ N., 1,290 m., fls. pink, leaves mottled, Sept., No. 3996. Boundary, long. 44° 15′ E., lat. 9° N., 1,230 m., infl. 1·5 m., fls. pinkish, leaves mottled, Sept., No. 4074. Vernac.—*Daar Biyu.*—Endemic.

A. Steudneri Schweinf.—F.T.A. 7 : 458.

Somaliland : Satoa tug, long. 43° 5′ E., lat. 9° 59′ N., 1,530 m., leaves mottled, Nov., No. 4618.

Abyssinia : Harar-Kofajalo Road, long. 41° 55′ E., lat. 9° 9′ N., 1,860 m., acaulescent, fls. coral or yellow, Mar., No. 5272. Vernac.—*Daar* (Somali) ; *Red* (Abyss.).

A. trichosantha Berger in Engl. Bot. Jahrb. 36 : 62 (1905).

Somaliland : Hargeisa, long. 44° 3′ E., lat. 9° 33′ N., 1,260 m., fls. pink, leaves erect, Sept., No. 4063.

Abyssinia : Boesesa valley, long. 42° 18′ E., lat. 9° 29′ N., 2,400 m., leaves green turning reddish, fls. pink, Feb., No. 5177. Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,730 m., fls. coral, unpleasant odour, Mar., No. 5335. Vernac.—*Daar Merodi* (Somali) ; *Erēt. Rēd* (Abyss.).—Also in Eritrea.

Albuca abyssinica Dryand.—F.T.A. 7 : 533.

Abyssinia : Gara mulata Mt., long. 41° 43′ E., lat. 9° 12′ N., 2,730 m., fls. yellow with green stripe, Mar., No. 5305. Gara mulata Mt., 3,180 m., Mar., No. 5367.

Somaliland : Buramo, long. 43° 10′ E., lat. 10° N., 1,440 m., leaves sometimes crisped at margins, fls. yellowish green with green stripe, Dec., No. 4724. Vernac.—*Ure tuku* ; *Gel adais*.

A. chaetopoda Chiov. Pl. Nov. vel minus Notae ex Aethiopia 3, n. 204, (1928).

Somaliland : Hargeisa, No. 4072. Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., fls. yellow, Sept., No. 4048. Vernac.—*Gel ahdeis*.—Endemic.

Scilla somaliensis Bak.—F.T.A. 7 : 557.

Somaliland : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., fls. green and cream, Oct., No. 4188. Afard, long. 44° 8′ E., lat. 10° 10′ N., 690 m., fls. pale purple, Oct., No. 4470. Buramo, 1,380 m., leaves and scape mottled with purple, Jan., No. 4853. Vernac.—*Gel adais* ; *Gelka abādis*.—Endemic.

Scilla carunculifera Chiov. Result. Sci. Miss. Stefan.-Paoli Somal. Ital. 1 : 174 (1916).

Somaliland : Berbera, fls. green with purplish stripe, Jan., No. 4753. Vernac.—*Gel adais*.—Endemic.

Dipcadi filamentosum Medic. in Usteri Ann. Bot. 2 : 13 (1791).

Somaliland : Buramo, Dumuk tug, long. 43° 12′ E., lat. 10° 1′ N., 1,140 m., fls. pale green, Jan., No. 4894.

Littonia obscura Bak. in Kew Bull. 1894 : 342.

Somaliland : Berbera, fls. in bud greenish yellow, reddish when opened, Jan., No. 4758. Vernac.—*Mijereri*.—Also in Arabia.

L. Hardeggeri Beck—F.T.A. 7 : 566.

Somaliland : Berbera, Jan., No. 4758A.—Endemic.

Asparagus asiaticus Linn.—F.T.A. 7 : 432.

Abyssinia : Slopes of Sarerta Mt., long. 42° 19′ E., lat. 9° 30′ N., 2,400 m., fls. white, Feb., No. 5184. Vernac.—*Sariti*.

A. falcatus Linn.—F.T.A. 7 : 435.

Somaliland : Hargeisa, long. 44° E., lat. 9° 35′ N., 1,380 m., Oct., No. 4264.

Asparagus Gillettii Chiov. sp. nov. (§*Asparagopsis*) affinis *A. albo* L. qui caules et ramos juveniles sulcatos et angulatos, intensius albos, pedicellorum partes basales 1·5–3 mm. longas habet.

Frutex erectus vel subscandens ; caules elati, internodiis 2–3 cm. longis superne 4–5 mm. diam. crassis cylindraceis, ad nodos leviter anfractis ; rami solitarii vel 3–4-fasciculati, simplices, subhorizontaliter patentes, 15–40 cm. longi, leviter flexuosi, internodiis cylindricis estriatis cinereis prope apicem albicantibus nitidulis 4–15 mm. longis prope basin ramorum 1·5–2 mm. crassis : spinae ad nodos primum subulatae, postremo conico-subulatae 10–12 mm. longae, basi 2 mm. diam. crassae, seniores plus minusve ad vel parum supra basin arcuato-reflexae, superne rectae. *Cladodia* in specimine desunt ; in axillis superioribus spinarum inflorescentiae

umbellatae subsessiles, basi foliis bracteiformibus ovatis scariosis involucratae, floribus 5–24, adsunt ; pedicelli 5–6 mm. longi, 0·75–1·25 mm. supra basin articulati. *Flores* monoclini ; perigonium campanulatum, tepalis exterioribus anguste ellipticis 4–5 mm. longis 1 mm. latis apice rotundatis, interioribus spathulatis apice rotundatis basin versus sensim angustatis aequilongis. *Stamina* 6, filamentis subulatis tenuissimis 3·5–4 mm. longis glabris sursum sensim attenuatis apice capillaceis ; antherae nigrae, ovatae, 0·5 mm. longae et latae, apice rotundato-obtusae, basi truncato-bilobae. *Ovarium* ovoideum, 2·5 mm. longum, 2 mm. latum, apice breviter conicum, in stilum vix 0·5 mm. longum manifeste trilobulatum productum, loculis triovulatis. *Bacca* subglobosa, immatura circ. 5 mm. diam.

Somaliland : Elmis, long. 44° 14′ E., lat. 10° 22′ N., 510 m., shrub 1 m. with weak trailing branches, 29 Oct., No. 4501 (type in Kew Herb). Vernac.—*Ergēg*.

A. Pauli-Guilelmi Solms-Laub.—F.T.A. 7 : 428.

Abyssinia : Kolubi-Harar Road, long. 41° 50′ E., lat. 9° 25′ N., 2,190 m., fls. white, Mar., No. 5464. Vernac.—*Seriti*.

A. racemosus Willd.—F.T.A. 7 : 434.

Somaliland : Buramo, long. 43° 10′ E., lat. 10° N., 1,710 m., climber, fls. pale yellow, Jan., No. 4846. Vernac.—*Ergēg*.

Merendera abyssinica A. Rich.—F.T.A. 7 : 558.

Abyssinia : Slopes of Sarerta Mt., long. 42° 19′ E., lat. 9° 30′ N., 2,400 m., fls. mauve, Feb., No. 5192.—Also in Arabia.

Araceae.

Arisaema Schimperianum Schott—F.T.A. 8 : 143.

Abyssinia : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,580 m., damp places on limestone, in ravine, fls. green, Mar., No. 5293.—Endemic.

Typhaceae.

Typha angustifolia Linn.—F.T.A. 8 : 135.

Somaliland : Debrawen, long. 42° 49′ E., lat. 10° 26′ N., 920 m., 2 m., Nov., No. 4646. Near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., 930 m., 4 m., Oct., No. 4328. Bir Dai, long. 44° 17′ E., lat. 9° 55′ N., 900 m., Oct., No. 4341. Vernac.—*Allala nudi* ; *Alal medu* ; *Alala*.

Amaryllidaceae.

Crinum ornatum (Linn. f.) Burg Hexand. t. 18 (1831–4).

Somaliland : Afard, long. 44° 12′ E., lat. 10° 8′ N., 690 m., fls. white with faint pink stripe, Oct., No. 4441. Vernac.—*Ure tuku*.

Haemanthus multiflorus Martyn—F.T.A. 7 : 388.

Somaliland : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,110–1,200 m., fls. red, anthers yellow, Oct., No. 4399. Vernac.—*Ged adais* ; *Ria Dararis*.

Hypoxidaceae.

Hypoxis sp.

Abyssinia: Kondudo Mt., long. 42° 20′ E., lat. 9° 27′ N., 2,760 m., fls. yellow, Feb., No. 5221.

Iridaceae.

Moraea diversifolia Bak.—F.T.A. 7: 339.

Abyssinia: Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,790 m., fls. mauve with yellow stripe, Mar., No. 5332.

Agavaceae.

Dracaena afromontana Mildbr. Wiss Ergebn. Deutsch. Zent.-Afr. Exped. 2: 62, t. v, a–e (1910). Dracaena reflexa *Lam.* var. nitens *Bak.*—F.T.A. 7: 441, partly (as to E. African specimens).

Abyssinia: Galla Pass, long. 42° 19′ E., lat. 9° 28′ E., 2,400 m., 4 m., fls. cream, fruit orange, Feb., No. 5146.

D. schizantha Bak.—F.T.A. 7: 437.

Somaliland: Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,200 m., tree 3 m., Oct., No. 4415. Berdale Mt., long. 43° E., lat. 10° 20′ N., 1,650 m., tree 5 m., Dec., No. 4685. Vernac.—*Morli.*

Sansevieria abyssinica N.E. Br. in Kew Bull. 1913: 306, et l.c. *1915*: 241.

Somaliland: Hargeisa, 1,290 m., leaves flat, fls. grey, Sept., No. 4041. Vernac.—*Hig.*

S. Ehrenbergii Schweinf. ex Bak.—F.T.A. 7: 334. N.E. Br. in Kew Bull. 1915: 207.

Somaliland: Buramo, long. 43° 12′ E., lat. 10° 1′ N., 1,200 m. 1 m., fls. purplish green, berries orange, Jan., No. 4885. Vernac.—*Hig.*

S. Phillipsiae N.E. Br. in Hook. Ic. Pl. 30: t. 3000 (1913), et Kew Bull. *1915*: 203.

Somaliland: Hargeisa, long. 44° 1′ E., lat. 9° 34′ N., fls. greenish, leaves terete, mottled, Sept., No. 3997. Vernac.—*Hig.*—Endemic.

Velloziaceae.

Vellozia Schnitzleinia Bak.—F.T.A. 7: 409.

Somaliland: Dubriat Mt., long. 45° 10′ E., lat. 10° 22′ N., 300 m., fls. greenish-yellow, 3 Jan., No. 4790.—Also in Abyssinia.

Orchidaceae (by V. S. Summerhayes)

Eulophia Petersii (Rchb. f.) Rchb. f.—F.T.A. 7: 55.

Somaliland: Ridge S.E. of Auboba, long. 43° 4′ E., lat. 9° 59′ N., 1,590 m., to 1·5 m., leaves succulent, Nov., No. 4613. Vernac.—*Degwen.*

E. Rueppelii (Rchb. f.) Summerh. comb. nov.

Lissochilus Rueppelii *Rchb. f.*—F.T.A. 7 : 91.

Abyssinia : Harar, long. 42° 6′ E., lat. 9° 18′ N., 1,920 m., sepals green tinged with purple, corolla and column yellow, Feb., No. 5030. Vernac.—*Jibi shunku.*

Polystachya Bennettiana Reichb. f.—F.T.A. 7 : 116.

Abyssinia : Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,430 m., epiphyte, fls. white with yellow spot on lower side of upper petal, fragrant, Mar., No. 5429.—Also in Eritrea.

Bonatea Phillipsii Rolfe—F.T.A. 7 : 254.

Somaliland : Buramo, So Mt., long. 43° 10′ E., lat. 10° N., 1,770 m., fls. yellowish green and white, strongly scented, Jan., No. 4848.—Endemic.

Juncaceae.

Juncus Bachiti Hochst.—F.T.A. 8 : 94.

Abyssinia : Gorla-Kolubi track, long. 41° 45′ E., lat. 9° 22′ N., 2,610 m., fls. dark brown, Mar., No. 5397.

Cyperaceae.

Scirpus corymbosus Roth—F.T.A. 8 : 455.

Abyssinia : Haramaia, long. 42° E., lat. 9° 24′ N., 1,980 m., infl. whitish, Mar., No. 5470. Vernac.—*Katema.*

S. costatus Boeck.—F.T.A. 8 : 451.

Abyssinia : Geldid, long. 41° 48′ E., lat. 9° 15′ N., 2,430 m., infl. black, Mar., No. 5383.

S. setaceus Linn.—F.T.A. 8 : 450.

Abyssinia : Gorla-Kolubi track, long. 41° 45′ E., lat. 9° 22′ N., 2,610 m., small, infl. whitish, Mar., No. 5402.

Eleocharis caribaea (Rottb.) Blake ex Forest Brown Occas. Papers Bishop Mus. Honolulu 9, 4 : 9 (1930). *E. capitata* R. Br.—F.T.A. 8 : 407.

Somaliland : Bir Dai, long. 44° 17′ E., lat. 9° 55′ N., 900 m., infl. white, Oct., No. 4339.

Fuirena pubescens (Lam.) Kunth—F.T.A. 8 : 463.

Abyssinia : Gorla-Kolubi track, long. 41° 45′ E., lat. 9° 22′ N., 2,610 m., infl. green, Mar., No. 5399.

Fimbristylis ferruginea Vahl—F.T.A. 8 : 417.

Somaliland : Bir Dai, long. 44° 17′ E., lat. 9° 55′ N., 900 m., infl. brownish, Oct., No. 4338. Vernac.—*Ghundo.*

Cyperus bulbosus Vahl—F.T.A. 8 : 352.

Somaliland : Buramo-Warieto tug, long. 43° 10′ E., lat. 10° 2′ N., 1,290 m., Jan., No. 4897.

C. compactus Lam.—F.T.A. 8 : 319.

Somaliland : Buramo, Dumuk tug, long. 43° 12′ E., lat. 10° 1′ N., 1,140 m., infl. white, Jan., No. 4891.

C. conglomeratus Rottb.—F.T.A. 8 : 324.

Somaliland : Afard, long. 44° 8′ E., lat. 10° 10′ N., 510 m., Oct., No. 4434. Berbera, Jan., No. 4738. Vernac.—*Atile. Darif.*

C. cruentus Rottb.—F.T.A. 8 : 325.

ADEN : 150 m., infl. reddish straw colour, Mar., No. 5512.

C. dichrostachys Hochst.—F.T.A. 8 : 331.

ABYSSINIA : Yuka, long. 41° 40′ E., lat. 9° 25′ N., infl. green, Mar., No. 5419.

C. esculentus Linn.—F.T.A. 8 : 355.

SOMALILAND : Near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., 930 m., Oct., No. 4331. Gorfulai, long. 43° 38′ E., lat. 10° 16′ N., 540 m., Nov., No. 4558. Vernac.—*Go-ondo.*

C. rigidifolius Steud.—F.T.A. 8 : 367.

ABYSSINIA : Yuka, 2,190 m., infl. blackish, Mar., No. 5426.

C. teneriffae Poir.—F.T.A. 8 : 317.

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,350 m., infl. brown, Sept., No. 4053. Vernac.—*Go-ouro.*

Mariscus coloratus Nees—F.T.A. 8 : 381.

ABYSSINIA : Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,160 m., infl. green and white, Mar., No. 5409.

Juncellus laevigatus C.B. Cl.—F.T.A. 8 : 308.

SOMALILAND : Near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., 930 m., Oct., No. 4304. Bir Dai, long. 44° 17′ E., lat. 9° 55′ N., 900 m., infl. white, Oct., No. 4340. Buramo, Dumuk tug, long. 43° 12′ E., lat. 10° 1′ N., 1,200 m., 1 m., Jan., No. 4884. Vernac.—*Da. Tugugoga.*

Pycreus aethiops C.B. Cl.—F.T.A. 8 : 297.

ABYSSINIA : Geldid, long. 41° 48′ E., lat. 9° 15′ N., 2,430 m., infl. dark brown, Mar., No. 5384.

P. Mundtii Nees—F.T.A. 8 : 294.

ABYSSINIA : Mulkajibri, long. 42° 16′ E., lat. 9° 24′ N., 1,620 m., infl. brownish, Feb., No. 5077.

Carex chlorosaccus C.B. Cl.—F.T.A. 8 : 519.

ABYSSINIA : Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,130 m., infl. green, Mar., No. 5415.

C. Petitiana A. Rich.—F.T.A. 8 : 522.

ABYSSINIA : Gara mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,820 m., infl. pale brown, Mar., No. 5310.

C. acutiformis Ehrh. Beitr. 4 : 43 (1789).

ABYSSINIA : Geldid, long. 41° 48′ E., lat. 9° 15′ N., 2,430 m., Mar., No. 5380.

C. Negrii Chiov. in Ann. Bot. Rom. 10 : 406 (1912).

ABYSSINIA : Yuka, 2,100 m., infl. greenish, Mar., No. 5421.—Endemic.

GRAMINEAE (by C. E. Hubbard).

Sehima nervosum (Rottl. ap. Willd.) Stapf—F.T.A. 9 : 36.

SOMALILAND : Buramo, long. 43° 10′ E., lat. 10° N., c. 1,500 m., Jan., No. 4855. Ohob Pass, long. 43° 13′ E., lat. 10° 11′ N., 1,200 m., Feb., No. 4945.

Lasiurus hirsutus (Forssk.) Boiss. forma—F.T.A. 9 : 60.

SOMALILAND : Afard, long. 44° 8′ E., lat. 10° 10′ N., 690 m., Oct., No. 4471. Vernac.—*Darif.*

Saccharum Ravennae (Linn.) Murr.—F.T.A. 9 : 96.

SOMALILAND : Near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., 930–1,080. m., Oct., No. 4327. Durdur tug, long. 43° 30′ E., lat. 10° 10′ N., 810 m., Nov., No. 4583. Vernac.—*Alal ad.*

Chrysopogon Aucheri (Boiss.) Stapf, var. *quinqueplumis* (Hack.) Stapf—F.T.A. 9 : 160.

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., Sept., No. 4012. Vernac.—*Daremo.*

Bothriochloa pertusa (Willd.) A. Camus = Amphilophis pertusa (*Willd.*) *Nash ex Stapf*—F.T.A. 9 : 175.

SOMALILAND : Buramo, long. 43° 10′ E., lat. 10° N., 1,380 m., Jan., No. 4841. Vernac.—*Domar.*

Eremopogon foveolatus (Del.) Stapf—F.T.A. 9 : 183.

SOMALILAND : Gorfulai, long. 43′ 38′ E., lat. 10° 16′ N., 480 m., Nov., No. 4549. Berbera, Jan., No. 4736.

Aden, 210 m., Mar., No. 5492. Vernac.—*Sarem* ; *Saren.*

Andropogon cyrtocladus Stapf—F.T.A. 9 : 240.

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 34′ N., 1,290 m., Sept., No. 3999. Vernac.—*Dur.*—Endemic.

A. polyatherus Hochst.—F.T.A. 9 : 223.

ABYSSINIA : Harar, long. 42° 10′ E., lat. 9° 20′ N., 1,650 m., Feb., No. 5052. Slopes of Sarerta Mt., 2,400 m., Feb., No. 5185. Vernac.—*Sardo.*—Also in Eritrea.

Cymbopogon divaricatus Stapf—F.T.A. 9 : 278.

SOMALILAND : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., Oct., No. 4208. Vernac.—*Lebjir.*—Endemic.

C. floccosus (Schweinf.) Stapf—F.T.A. 9 : 276.

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., Sept., No. 3984. Burmado, long. 43° 50′ E., lat. 10° 13′ N., 780 m., Nov., No. 4543. Ohob Pass, long. 43° 13′ E., lat. 10° 11′ N., 1,200 m., Feb., No. 4944. Vernac.—*Arab jib, Hadaf.*—Also in Eritrea.

C. Schoenanthus (Linn.) Spreng.—F.T.A. 9 : 268.

SOMALILAND : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,080 m., among rocks, Oct., No. 4371. Vernac.—*Aus Damer.*

Hyparrhenia hirta (Linn.) Stapf—F.T.A. 9 : 315.

SOMALILAND : Hargeisa, 1,290 m., Sept., No. 3984A., Libah Mele Range, Kabal Gabat Pass, long. 43° E., lat. 10° 20′ N., 1,110 m., Dec., No. 4679. Buramo-Warieto tug, long. 43° 10′ E., lat. 10° 2′ N., 1,080 m., Jan., No. 4914.

ABYSSINIA : Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,250 m., Mar., No. 5435. Vernac.—Delan.

forma *podotricha* Stapf.

ABYSSINIA : Harar, long. 42° 10′ E., lat. 9° 20′ N., 1,650 m., awns black, Feb., No. 5059. Vernac.—*Sav.*

Heteropogon contortus (Linn.) Beauv. ex Roem. et Schult.—F.T.A. 9 : 411.

Somaliland : Buramo, long. 43° 10′ E., lat. 10° N., 1,590 m., Dec., No. 4717. Vernac.—*Eba titis.* Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., Sept., Nos. 4007, 4252. Vernac.—*Buri gudud, Aus gudud.*

Digitaria abyssinica (Hochst. ex A. Rich.) Stapf—F.T.A. 9 : 460 in part.

Abyssinia : Geldid, long. 41° 48′ E., lat. 9° 12′ N., 2,520 m., Mar., No. 5290.

D. pennata (Hochst.) Cooke—F.T.A. 9 : 472.

Somaliland : Buramo-Warieto tug, long. 43° 10′ E., lat. 10° 2′ N., 1,140 m., Jan., No. 4904.

D. velutina (Forssk.) Beauv. D. horizontalis *Willd.*—F.T.A. 9 : 436, in part.

Somaliland : Mt. Wobleh, long. 43° 17′ E., lat. 10° 15′ N., 1,290 m., Feb., No. 4980.

Eriochloa nubica (Steud.) Hack. & Stapf. E. acrotricha (*Steud.*) *Hack.*—F.T.A. 9 : 499.

Somaliland : Hargeisa, 1,290 m., Sept., No. 3913A.

Brachiaria glauca Stapf—F.T.A. 9 : 550.

Somaliland : Gorfulai, long. 43° 38′ E., lat. 10° 16′ N., 540 m., Nov., No. 4557.

B. leersioides (Hochst.) Stapf—F.T.A. 9 : 551.

Somaliland : Buramo, Warieto tug, long. 43° 10′ E., lat. 10° 2′ N., Jan., No. 4899.

Brachiaria somalensis C. E. Hubbard, sp. nov., affinis *B. seligerae* (Retz.) C. E. Hubbard, sed culmis foliisque pubescentibus, spiculis elliptico-ovatis vel ellipticis acutis vel subacutis, lemmate superiore longiore minute mucronulato differt.

Gramen annuum (?). *Culmi* geniculato-adscendentes, usque ad 60 cm. longi, graciliusculi, laxe ramosi, multinodes, tenuiter striati, pilis patulis brevibus pubescentes. *Foliorum vaginae* internodiis subaequilongae vel breviores, demum laxae, striatae, dense pilosae, nodis villosae ; ligulae ad seriem densam ciliorum redactae ; laminae anguste lanceolatae, basi rotundatae, in acumen tenue attenuatae, 3·5–8·5 cm. longae, 5–12 mm. latae, planae, patulae, pilis brevissimis sericeis dense pubescentes vel supra glabrescentes, marginibus scaberulae et ciliolatae. *Inflorescentia* laxa, 7–10 cm. longa, e vagina summa demum longe exserta ; axis primarius dense pubescens, uno latere sulcatus. *Racemi* 6, laxiuscule spiculati, usque ad 5·5 cm. longi, solitarii, patentes ; rhachis gracillima, 0·5–0·6 mm. lata, triquetra, leviter flexuosa, brevissime pubescens ; pedicelli pubescentes, laterales brevissimi, terminales 1–3 mm. longi. *Spiculae* binae vel racemorum apicem versus solitariae, a dorso visae elliptico-ovatae vel ellipticae, acutae vel subacutae, 3·5–4 mm. longae, brevissime pubescentes, minutissime tuberculatae. *Gluma inferior* latissima (explanata), rotundato-truncata, 1–1·3 mm., longa, tenuissime membranacea, 1–3-nervis ; gluma superior latissime

elliptica et obtusa (explanata), spiculae aequilonga, dorso convexa, membranacea, 9-nervis. *Anthoecium inferum* sterile : lemma glumae superiori simile, sed dorso concavum vel plus minusve applanatum, 6–7-nerve ; palea elliptica, obtusa, 3 mm. longa, tenuiter membranacea, carinis anguste alatis. *Anthoecium superum* ♂ a dorso visum late ellipticum, a latere visum semi-ellipticum, 3 mm. longum : lemma et palea rigide coriacea, tenuissime transverse rugosa ; lemma minute mucronulatum, 5-nerve ; antherae 1·5 mm. longae.

SOMALILAND : Buramo-Warieto tug, 10° 2′ N., 43° 10′ E., in open woodland, on steep gneiss slopes, 1,140 m., 31.1.1933, *Gillett* 4903 (type in Kew Herb.).

Paspalidum desertorum (A. Rich.) Stapf—F.T.A. 9 : 585.

SOMALILAND : Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,050 m., Oct., No. 4368. Vernac.—*Gara gara ad.*

P. geminatum (Forssk.) Stapf—F.T.A. 9 : 583.

SOMALILAND : Buramo-Warieto tug, long. 43° 10′ E., lat. 10° 2′ N., 1,080 m., Feb., No. 4926.

Paspalum vaginatum Sw.—F.T.A. 9 : 570.

SOMALILAND : Buramo-Warieto tug, Feb., No. 4925.

Urochloa panicoides Beauv. U. Helopus (*Trin.*) *Stapf*—F.T.A. 9 : 595.

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., Sept., No. 3913.

Echinochloa colonum (L.) Link.—F.T.A. 9 : 607.

SOMALILAND : Debrawen, long. 42° 49′ E., lat. 10° 26′ N., 960 m., Nov., No. 4669. Vernac.—*Agar.*

Panicum maximum Jacq.—F.T.A. 9 : 655.

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., Sept., No. 3912. Jifa Uri, long. 43° 22′ E., lat. 9° 42′ N., 1,680 m., Jan., No. 4837.

ABYSSINIA : Harar, long. 42° 10′ E., lat. 9° 20′ N., 1,740 m., Feb., No. 5037. Vernac.—*Buldorleh ; Sar.*

P. turgidum Forssk.—F.T.A. 9 : 706.

SOMALILAND : Hargeisa, 1,290 m., Sept., No. 3979. Elmis, long. 44° 14′ E., lat. 10° 20′ N., 240 m., Oct., No. 4493. Vernac. —*Dungara.*

Setaria verticillata (Linn.) Beauv.—F.T.A. 9 : 824.

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., Sept., No. 3916.

Rhynchelytrum repens (Schumach.) C. E. Hubbard. R. roseum (*Nees*) *Stapf & Hubbard.*—F.T.A. 9 : 880.

SOMALILAND : Mt. Wobleh, long. 43° 17′ E., lat. 10° 15′ N., 1,020 m., Feb., No. 4993.

ABYSSINIA : Harar, long. 42° 10′ E., lat. 9° 20′ N., 1,740 m., Feb., No. 5042. Vernac.—*Sar.*

R. villosum (Parl.) Chiov.—F.T.A. 9 : 875.

SOMALILAND : Hargeisa, long. 44° E., lat. 9° 35′ N., 1,410 m., Oct., No. 4266.

Tricholaena Gillettii C. E. Hubbard, sp. nov., affinis *T. teneriffae* (Linn.f.) Parl., a qua spiculis minoribus, glumarum pilis brevioribus differt.

Gramen perenne, 20–25 cm. altum, basi multiramosum. *Culmi* geniculato-adscendentes, graciles, teretes, ramosi, plurinodes, internodio summo (pedunculo) glabro laevi 6–9 cm. longo, internodiis inferioribus minute pubescentibus vel glabris multo brevioribus. *Folia* glauca ; vaginae internodiis aequilongae vel demum paullo breviores, laxae, tenuiter striatae, ore pilis patulis paucis praeditae vel omnino glabrae, laeves ; ligulae ad seriem ciliorum brevium redactae ; laminae lineares, in apicem subobtusum callosum attenuatae, 2–5 cm. longae, 2–3·5 mm. latae, planae vel siccitate involutae, rigidiusculae, patulae, supra minutissime et obscure pubescentes, subtus glabrae, laeves. *Panicula* lanceolata vel oblonga, densiuscula, 2·5–5 cm. longa, 1–2 cm. lata, albido-viridis et purpureo-tincta ; rhachis flexuosa, glabra, laevis ; rami tenuiter filiformes, solitarii, flexuosi, glabri, laeves, basi divisi, inferiores usque ad 2 cm. longi ; pedicelli flexuosi, laeves, 0·5–2 mm. longi, apice discoidei. *Spiculae* oblongae, 2·5–2·8 mm. longae, pilis patulis albis sericeis usque ad 2 mm. longis e tuberculis minutissimis ortis laxe pilosae. *Gluma inferior* rotundata, 0·3 mm. longa, tenuiter membranacea, longe pilosa, enervis ; gluma superior ovata (explanata), obtusa, minute mucronulata, spiculae aequilonga vel paullo brevior, 5-nervis, laxe pilosa, marginibus ciliolata, membranacea. *Anthoecium inferum* ♂, spiculae aequilongum : lemma glumae superiori simile sed ovato-ellipticum, obtusum, minute mucronulatum ; palea lanceolata, lemmate paullo brevior, tenuiter membranacea, apice ciliolata ; antherae 1·5–1·7 mm. longae. *Anthoecium superum* ♀, ovatum vel anguste ovatum, obtusum, 1·5-1·6 mm. longum : lemma elliptico-ovatum (explanatum), obtusissimum, obscure nerve, laeve, nitens ; palea oblonga, lemmate paullo longior ; antherae 1 mm. longae.

Somaliland : Duwi, 10° 5′ N., 44° 15′ E., in tree Acacia—grass community, 1,020 m., 21.10.1932, *Gillett* 4395 (type in Kew Herb.).

T. leucantha Hochst.—F.T.A. 9 : 915.

Somaliland : Jebel Wotni Mt., long. 45° 6′ E., lat. 10° 18′ N., 390 m., Jan., No. 4803.

Aden : 450 m., Mar., No. 5486. Vernac.—*Agar.*

Tricholaena setacea C. E. Hubbard, sp. nov., affinis *T. Gillettii* C. E. Hubbard, sed foliorum laminis longioribus setaceis, paniculis laxioribus, glumarum pilis brevioribus differt.

Gramen perenne, laxe caespitosum, usque ad 45 cm. altum. *Culmi* erecti vel geniculato-adscendentes, graciles, rigidi, plus minusve ramosi, multinodes, glabri, laeves, internodiis inferioribus 1–5 cm. longis, internodio summo (pedunculo) usque ad 20 cm. longo. *Foliorum vaginae* arcte appressae, internodiis plerumque longiores, teretes, juveniles minute pubescentes, demum glabrae, laeves ; ligulae ad seriem ciliorum brevissimorum redactae ;

laminae angustissime lineares, in apicem setaceum attenuatae, 2–8 cm. longae, planae vel siccitate convolutae, 1–2·5 mm. latae, demum horizontaliter patentes, rigidiusculae, supra minute pubescentes, subtus glabrae, laeves. *Panicula* lanceolata vel ovata, laxa, 4–9 cm. longa, 2–6 cm. lata; rhachis gracillima, glabra, laevis; rami binati vel solitarii, laxe divisi, capillares, flexuosi, laeves, inferiores usque ad 4 cm. longi; pedicelli inaequales, usque ad 6 mm. longi, glabri, laeves, apice discoidei. *Spiculae* oblongae vel ovato-oblongae 2·5–3 mm. longae, pilis patulis albis usque ad 1·5 mm. longis e tuberculis minutissimis laxe pilosae, purpureo-variegatae vel pallide virides. *Gluma inferior* ovata et usque ad 0·3 mm. longa vel ad marginem minutam angustam redacta, tenuiter membranacea, longe pilosa, enervis; gluma superior elliptico-ovata (explanata), obtusa, plerumque minute mucronulata, spiculae aequilonga vel paullo brevior, membranacea, laxe pilosa, marginibus ciliolata, 5-nervis. *Anthoecium inferum* ♂, spiculae aequilongum: lemma glumae superiori simile sed latius; palea lanceolata, lemmati aequilonga, tenuiter membranacea, carinis prope apicem ciliolata; antherae 2·3 mm. longae. *Anthoecium superum* ☿, ovatum, acutum, 2–2·5 mm. longum: lemma elliptico-ovatum (explanatum), obtusum, tenuiter crustaceum, laevissimum, nitens, obscure nerve; palea lemmate paullo longior; caryopsis 1–1·5 mm. longa.

Somaliland: Burmado, 10° 13′ N., 43° 50′ E., on mountain top, lower part of tree Acacia—open wood, amongst rocks, 975 m., 2–11–1932, *Gillett* 4539 (type in Kew Herb). Vernac.—*Oro jar yer.*

T. teneriffae (Linn. f.) Parl.—F.T.A. 9: 913.

Somaliland: Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., Sept., No. 4006. Gorfulai, long. 43° 38′ E., lat. 10° 16′ N., 480 m., Nov., No. 4551. Vernac.—*Buldorle agar*; *Fordade.*

Pennisetum clandestinum Hochst. ex Chiov.—F.T.A. 9: 1009.

Abyssinia: Gorla, long. 41° 48′ E., lat. 9° 20′ N., 2,700 m., stamens protandrous, filaments nearly 4 cm. long, Mar., No. 5396.

P. divisum (Gmel.) Henrard. P. dichotomum (*Forssk.*) *Delile*—F.T.A. 9: 972.

Somaliland: Biji, long. 44° 5′ E., lat. 10° 12′ N., 420 m., Oct., No. 4513. Vernac.—*Dungara.*

P. massaicum Stapf, forma.—F.T.A. 9: 973.

Somaliland: Boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,290 m., Oct., No. 4133. Vernac.—*Irdug.*

P. setaceum (Forssk.) Chiov.—F.T.A. 9: 1013.

Somaliland: Hargeisa, long. 44° E., lat. 9° 35′ N., 1,410 m., Oct., No. 4259. Goton, long. 42° 54′ E., lat. 10° 9′ N., 1,410 m., Nov., No. 4634. Vernac.—*Aus Damer*; *Arab jib*; *Arab load.*

Cenchrus ciliaris Linn.—F.T.A. 9: 1072.

Somaliland: Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., Sept., Nos. 3911; 4008; 4036. Boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,260 m., Sept., Nos. 4092; 4231. Vernac.—*Agar, Garde agar, Irdug.*

C. pennisetiformis Hochst. & Steud.—F.T.A. 9 : 1076.

SOMALILAND : Dubriat Mt., long. 45° 10′ E., lat. 10° 22′ N., c. 300 m., Jan., No. 4785.

C. setigerus Vahl.—F.T.A. 9 : 1077.

SOMALILAND : near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., 930 m., Oct., No. 4325.

Danthoniopsis barbata (Nees) C. E. Hubbard—F.T.A. 10 : 74.

SOMALILAND : Near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., 960 m., Oct., No. 4322. Vernac.—*Oro jar.*

Phragmites communis Trin.—F.T.A. 10 : 153.

SOMALILAND : Gorfulai, long. 43° 38′ E., lat. 10° 16′ N., 540 m., Nov., No. 4562. Vernac.—*Gul bilanwe.*

Agrostis Schimperiana Hochst. ex Steud.—F.T.A. 10 : 175.

ABYSSINIA : Gara Mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., Mar., No. 5312.

A. semiverticillata (Forssk.) C. Christ.—F.T.A. 10 : 173.

ABYSSINIA : Mulka Jibri, long. 42° 16′ E., lat. 9° 24′ N., 1,620 m., floating in stream, Feb., No. 5082. Vernac.—*Sardo.*

Aristida abnormis Chiov. in Ann. Istit. Bot. Roma, 8 : 48 (1903).

SOMALILAND : Milmil, long. 42° 42′ E., lat. 10° 30′ N., 900 m., Nov., No. 4666.

A. adoensis Hochst. in Schimper, It. Abyss. Sec. III, No. 1806 (1844).

ABYSSINIA : Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,250 m., Mar., No. 5434.

A. adscensionis Linn. Sp. Pl. 1 : 82 (1753).

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., Sept., No. 3983. Boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,260 m., Sept., No. 4088.

Var. *aethiopica* Dur. & Schinz.

SOMALILAND : Kabrih Bahr, long. 43° 44′ E., lat. 10° 20′ N., 480 m., Nov., No. 4547. Buramo, long. 43° 10′ E., lat. 10° N., c. 1,410 m., Jan., No. 4871. Vernac.—*Tinleh.*

A. caerulescens Desf. Fl. Atl. 1 : 109 (1798).

SOMALILAND : Jalelo, long. 44° 14′ E., lat. 9° 45′ N., 1,080 m., Oct., No. 4292. Vernac.—*Ma ruet.*

A. hirtigluma Steud. Syn. Pl. Glum. 1 : 144 (1854).

SOMALILAND : Boundary Pillar 93, long. 44° 15′ E., lat. 8° 58′ N., 1,260 m., Sept., No. 4106. Jelelo, long. 44° 14′ E., lat. 9° 45′ N., 1,080 m., on schist rocks, Oct., No. 4296. Vernac.—*Harfo ; Saren.*

A. Kelleri Hack. in Mém. Herb. Boiss. No. 20, 8 (1900).

SOMALILAND : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., Oct., No. 4169.—Endemic.

A. mutabilis Trin. & Rupr. Spec. Gram. Stip. 150 (1842) et in Mém. Acad. Imp. Sci. Pétersb. sér. 6, 6 : pt. 2, 150 (1843).

SOMALILAND : Milmil, long. 42° 42′ E., lat. 10° 30′ N., 900 m., Nov., No. 4667.

A. papposa Trin. & Rupr. l.c. 173.

SOMALILAND : Afard, long. 44° 8′ E., lat. 10° 10′ N., 540 m., Oct., No. 4460.

A. migiurtina Chiov. Pl. Nov. Aethiop. 29 (1928). (det. Chiovenda).

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 35′ N., 1,410 m., Sept., No. 4029.

The following numbers of *Aristida* have not yet been determined :—4664 ; 4750 ; 4761 ; 4783.

Oryzopsis keniensis Pilger in Notizbl. Bot. Gart. Berlin, 9 : 509 (1926).

ABYSSINIA : Yuka, long. 41° 40′ E., lat. 9° 25′ N., up to 1 m., Mar., No. 5422.

Tragus Berteronianus Schult. Syst. Veg. 2, Mant. : 205 (1824).

SOMALILAND : Las Dawan, long. 45° 17′ E., lat. 10° 20′ N., 200 m., Jan., No. 4810.

T. racemosus (Linn.) All. Fl. Pedem. 2 : 241 (1785).

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., Sept., No. 3929. Vernac.—*Nagard.*

Latipes senegalensis Kunth Rév. Gram. 1 : 261, t. 42 (1830).

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., Sept., No. 4010.

Dignathia villosa C. E. Hubbard in Kew Bull. 1936 : 293.

SOMALILAND : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., Oct., No. 4201.

Sporobolus Brockmanii Stapf in Kew Bull. 1907 : 220.

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., Sept., No. 4016. Vernac.—*Buldorle.*

S. marginatus Hochst. ex A. Rich. Tent. Fl. Abyss. 2 : 397 (1851).

SOMALILAND : Hargeisa, 1,290 m., Sept., No. 3918. Boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,260 m., Sept., No. 4091. Vernac.—*Dihi ; Timo na godleh.*

S. Ruspolianus Chiov. in Ann. Bot. Roma, 5 : 64 (1906).

SOMALILAND : Boundary Pillar 99, long. 44° 39′ E., lat. 8° 47′ N., 1,140 m., Oct., No. 4148. Vernac.—*Sifar.*

S. robustus Kunth Rév. Gram. 2 : 425, t. 126 (1831).

SOMALILAND : Dubar, long. 45° 5′ E., lat. 10° 20′ N., 120 m., Jan., No. 4766. Near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., 930 m., Oct., No. 4329.

S. spicatus (Vahl) Kunth Rév. Gram. 1 : 67 (1829).

SOMALILAND : Near Eil Demet, long. 44° 17′ E., lat. 9° 53′ N., 930 m., Oct., No. 4326. Gorfulai, long. 43° 38′ E., lat. 10° 16′ N., 510 m., Nov., No. 4556. Berbera, forming close mats, Jan., No. 4737. Vernac.—*Garo ; Debo welodle.*

S. variegatus Stapf in Kew Bull. 1907 : 218.

Somaliland : Boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,260 m., Sept., No. 4082. Debrawen, long. 42° 49′ E., lat. 10° 26′ N., 960 m., forming low flat cushions, Nov., No. 4668. Vernac.—*Dihe.*—Endemic.

The following numbers of *Sporobolus* have not yet been determined :—4015 ; 4096 ; 4537 ; 4820 ; 4898 ; 4928 ; 5171.

Harpachne Schimperi Hochst. ex A. Rich. Tent. Fl. Abyss. 2 : 431 (1851).

Abyssinia : Boesesa Valley, long. 42° 18′ E., lat. 9° 29′ N., 1,950 m., Feb., No. 5171.

Eragrostis aulacosperma Steud. Syn. Pl. Glum. 1 : 269 (1854).

Somaliland : Hargeisa, 1,290 m., Sept., Nos. 3915 ; 3971 ; long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., Sept., Nos. 4014, 4055. Dobo Pass, long. 43° 15′ E., lat. 10° 15′ N., 1,200 m., Feb., No. 4963. Vernac.—*Warram bihi* ; *Dihi* ; *Tingleh.*

E. hararensis Chiov. in Ann. Istit. Bot. Roma, 6 : 163 (1896).

Somaliland : Berbera, prickly leaves, Jan., No. 4754, long. 44° 8′ E., lat. 10° 10′ N., 510 m., Oct., No. 4433. Vernac.—*Gubungub.*

E. Schweinfurthii Chiov. in Ann. Istit. Bot. Roma, 8 : 368 (1908).

Abyssinia : Gara Mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,670 m., Mar., No. 5344.

Cypholepis yemenica (Schweinf.) Chiov. in Ann. Istit. Bot. Roma, 8 : 357 (1908). Eragrostis yemenica *Schweinf.* in Bull. Herb. Boiss. 2 : App. 2, 41 (1894). Leptochloa Appletonii *Stapf* in Kew Bull. 1907 : 223.

Somaliland : Buramo, Dumuk tug, long. 43° 10′ E., lat. 10° N., 1,260 m., Jan., No. 4872. Dobo Pass, long. 43° 15′ E., lat. 10° 15′ N., 1,200 m., Feb., No. 4966.

Leptochloa obtusiflora Hochst. in Flora, 28 : 203 (1855).

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,440 m., Sept., No. 4059. Boundary, long. 45° 10′ E., lat. 8° 57′ N., 1,260 m., Sept., No. 4080. Mt. Wobleh, long. 43° 17′ E., lat. 10° 15′ N., 1,050 m., Nov., No. 4584. Vernac.—*Aus urun* ; *Buldorle.*

Leptochloa rupestris C. E. Hubbard, sp. nov., affinis *L. uniflorae* Hochst., sed culmis gracilioribus rigidioribus, foliorum laminis angustioribus, lemmatibus glumas plerumque aequantibus vel paullo brevioribus differt.

Gramen perenne (?). *Culmi* erecti vel e basi prostrata geniculato-adscendentes, usque ad 50 cm. alti, gracillimi, rigidi, teretes, laxe ramosi, multinodes, glabri, laeves. *Foliorum vaginae* arcte appressae, angustissimae, glabrae, laeves, internodiis demum breviores ; ligulae membranaceae, laceratae, usque ad 1 mm. longae ; laminae anguste lanceolatae vel angustissime elliptico-lanceolatae, basi abrupte contractae, apice tenuiter acutae, 3–5·5 cm. longae, 3·5–7·5 mm. latae, planae, tenues, virides, glabrae, marginibus minute

scaberulae. *Inflorescentia* oblonga, laxa, 7–11 cm. longa, 2·5–3·5 cm. lata ; axis primarius gracillimus, laevis. *Racemi* numerosi, gracillimi, secundi, plerumque solitarii, demum patuli, recti vel flexuosi, 2–2·8 cm. longi ; rhachis applanata, 0·2–0·3 mm. lata, marginibus scaberula. *Spiculae* sessiles, laxe imbricatae, anguste oblongae vel demum hiantes, 2·3–2·7 mm. longae, pallide virides vel purpureo-tinctae, 1-florae ; rhachilla supra anthoecium brevissime producta. *Glumae* subaequales, 2·3–2·7 mm. longae, carinatae, tenuiter acutae, membranaceae, 1-nerves, carina laeves vel parce scaberulae ; inferior lanceolato-linearis (explanata) ; superior anguste lanceolata (explanata). *Lemma* lanceolatum et obtusum (explanatum), 2–2·5 mm. longum, carinatum, membranaceum, tenuiter 3-nerve, nervis nisi apicem versus breviter pubescens. *Palea* oblonga, truncata, lemmati aequilonga, glabra vel basin versus pilis paucis praedita. *Antherae* 1·5 mm. longae.

Somaliland : Mt. Wobleh, 10° 15′ N., 43° 17′ E., on gneiss slopes, in open wood—evergreen scrub, 1,290 m., 6–2–1933, *Gillett* 4981 (type in Kew Herb.) ; Jifa Uri, 9° 42′ N., 43° 22′ E., gneiss kopje, in evergreen scrub, 1,680 m., 10–1–1933, *Gillett* 4838.

Oropetium capense Stapf in Dyer, Fl. Cap. 7 : 742 (1900).

Somaliland : Dobo Pass, long. 43° 15′ E., lat. 10° 15′ N., 1,200 m., Feb., No. 4964.

Chaetostichium minimum (Hochst.) C. E. Hubbard in Hook. Ic. Pl. 34 : t. 3341 (1937).

Somaliland : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., Oct., No. 4163. Jebel Wotni Mt., long. 45° 6′ E., lat. 10° 18′ N., c. 390 m., on limestone slopes in open scrub, Jan., No. 4800.

Microchloa Kunthii Desv. Opusc. 75 (1831).

Abyssinia : Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,550 m., Mar., No. 5442.

Cynodon Dactylon (Linn.) Pers. Syn. Pl. 1 : 85 (1805).

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., Sept., No. 3930. Daba Bur, long. 43° 6′ E., lat. 9° 59′ N., 1,470 m., Nov., No. 4611. Buramo-Warieto tug, long. 43° 10′ E., lat. 10° 2′ N., Feb., No. 4927.

Abyssinia : Near Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,430 m., Mar., No. 5437.

Enteropogon barbatus C. E. Hubbard, sp. nov., affinis *E. Ruspoliano* Chiov. sed glumis inaequaliter bilobis, gluma inferiore longiore obtussissima, callo anthoecii pilis 4–5 mm. longis dense barbato differt.

Gramen perenne, dense caespitosum, circiter 70 cm. altum. *Culmi* erecti, graciles, inferne plus minusve compressi, superne teretes, simplices vel basin versus ramosi, 3-nodes, glabri, laeves. *Folia* glauca ; vaginae minute asperulae, basales valde compressae

et acute carinatae, imbricatae, marginibus pilis longis tenuissimis laxe ciliatae, superiores internodiis breviores, subteretes, glabrae ; ligulae ad seriem densam pilorum redactae, pilis albis sericeis patulis usque ad 8 mm. longis ; laminae anguste lineares, in apicem setaceum tenuissimum longe attenuatae, usque ad 40 cm. longae, conduplicatae, vel explanatae et usque ad 3 mm. latae, glabrae, plus minusve minute asperulae vel laeves. *Spica* gracilis, recta vel leviter curvata, 11–18 cm. longa, secunda, pallide viridis vel purpureo-tincta ; rhachis 0·8 mm. lata, dorso scaberula, basi villosa. *Spiculae* dense imbricatae, 7–8 mm. longae, 2-florae. *Glumae* membranaceae, 1-nerves, minute asperulae ; inferior oblonga (explanata), obtusissima, 3–4·5 mm. longa, breviter et inaequaliter biloba, e sinu nonnunquam minute mucronata ; superior anguste oblonga vel anguste oblongo-lanceolata (explanata), 5–8 mm., longa, inaequaliter biloba, lobis acutis angustis usque ad 1 mm. longis, mucrone usque ad 0·7 mm. longo e sinu oriente praedita. *Lemmata* anguste elliptica (explanata), apice anguste et acute biloba, lobis usque ad 1 mm. longis, arista usque ad 4 mm. longa e sinu oriente praedita, demum coriacea, 3-nervia, glabra, scabrida, primum 5–7 mm. longum, secundum 4 mm. longum ; callus rotundato-obtusus, 0·6–0·8 mm. longus, pilis albis sericeis 4–5 mm. longis dense barbatus. *Paleae* lanceolato-lineares, acuminatae, truncatae, bimucronulatae, dorso minute hispidulae, carinis supra medium scaberulae, prima 5·5–7·5 mm. longa, secunda 4·5–5 mm. longa. *Antherae* 2–3 mm. longae. *Caryopsis* dorso visa anguste elliptica, 5·5 mm. longa.

Somaliland : Boundary Pillar 93, 45° 9′ E., 8° 37′ N., 990 m., 6–10–1932, *Gillett* 4196 (type in Kew Herb.). Vernac.—*Aus Gorun.*

Kenya Colony : Northern Frontier Province, 1932, *McKay* 4.

Chloris myriostachya Hochst. in Flora, 28 : 204 (1855).

Somaliland : Boundary Pillar 93, long. 45° 9′ E., lat. 8° 37′ N., 990 m., infl. purplish, Oct., No. 4197. Vernac.—*Aro ane.*

C. pycnothrix Trin. Gram. Unifl. 234 (1824).

Somaliland : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., Sept., No. 3917.

C. virgata Sw. Fl. Ind. Occ. 1 : 203 (1797).

Somaliland : Hargeisa, 1,290 m., Sept., No. 3914.

Tetrapogon spathaceus (Hochst.) Hack. ex Dur. & Schinz, Consp. Fl. Afr. 5 : 864 (1894).

Somaliland : Boundary, long. 43° 54′ E., lat. 9° 2′ N., 1,350 m., infl. reddish, Oct., No. 4228. Vernac.—*Bulbiorle.*

T. tenellus (Roxb.) Chiov. in Ann. Istit. Bot. Roma, 8 : 352 (1908).

Somaliland : Buramo-Warieto tug, long. 43° 10′ E., lat. 10° 2′ N., c. 1,170 m., infl. green and dark red, Jan., No. 4901. Boundary, long. 44° 10′ E., lat. 8° 57′ N., 1,290 m., Oct., No. 4117.

T. villosus Desf. Fl. Atl. 2 : 389 (1799).

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., Sept., No. 4009. Buramo, 1,500 m., infl. reddish brown, Jan., No. 4854. Dobo Pass, long. 43° 15′ E., lat. 10° 15′ N., 1,200 m., Feb., No. 4965. Vernac.—*Buri wena.*

Coelachyrum poaeflorum Chiov. in Ann. Istit. Bot. Roma, 7 : 75 (1897).

SOMALILAND : Hargeisa, long. 44° 3′ E., lat. 9° 33′ N., 1,260 m., Sept., No. 4065. Dobo Pass, long. 43° 15′ E., lat. 10° 15′ N., 1,200 m., infl. blackish green, Feb., No. 4967. Duwi, long. 44° 15′ E., lat. 10° 5′ N., 1,050 m., Oct., No. 4369. Vernac.—*Domar.*

Coelachyrum stoloniferum C. E. Hubbard, sp. nov., affinis *C. poaefloro* Chiov., sed spiculis laxe imbricatis, lemmatibus emucronatis minus pubescentibus differt.

Gramen perenne, usque ad 40 cm. altum, glaucum, stoloniferum ; stolones longi, ramosi, internodiis rigidissimis solidis glabris, e nodis innovationes breves edentes. *Culmi* erecti, graciles, 1–3-nodes, tenuissime striati, glabri, laeves. *Foliorum vaginae* glabrae, laeves, eae innovationum dense imbricatae, usque ad 8 mm. longae, basi stramineae, eae culmorum internodiis multo breviores, arcte appressae ; ligulae truncatae, usque ad 1 mm. longae, apice laceratae, membranaceae ; laminae lineares vel angustissime lanceolatae, subpungentes, usque ad 5 cm. longae, 2–2·5 mm. latae, planae, rigidae, demum patulae vel recurvatae, glabrae, marginibus cartilagineis albidis scaberulis. *Inflorescentia* 2·3–6 cm. longa, laxe ramosa ; axis primarius superne flexuosus, angulatus, leviter scaberulus. *Racemi* 4–6, solitarii, demum horizontaliter patentes, basi nudati, inferiores usque ad 5 cm. longi, ceteri gradatim breviores ; rhachis gracillima, angulata, angulis scaberulis ; pedicelli 0·2–2 mm. longi. *Spiculae* laxe imbricatae, oblongae, 4–8 mm. longae, 3–4 mm. latae, plerumque pallide flavido–et purpureo–variegatae, 6–14-florae. *Glumae* ovato-oblongae vel oblongo-ellipticae (explanatae), obtusae, aequales, 2·4–2·8 mm. longae, carinatae, membranaceae, 1-nerves, minutissime asperulae, carina superne scaberulae. *Lemmata* imbricata, late oblongo-elliptica (explanata), obtusa, subintegra vel minutissime biloba, 3 mm. longa (inferiora), membranacea, 3-nervia, minutissime asperula, infra medium secus margines dense breviter pubescentia et basin versus dorso minute sparse puberula. *Paleae* oblongae, truncatae vel obtusissimae, circiter 2·8 mm. longae (inferiores), membranaceae, marginibus angustis inflexis breviter pubescentes, dorso infra medium minute pubescentes. *Antherae* 1–1·5 mm. longae. *Caryopsis* oblongo-elliptica, 1·5 mm. longa, dorso valde compressa, concavo-convexa.

SOMALILAND : near Eil Demet, 44° 17′ E., 9° 53′ N., in sand near tug, 930 m., 17.10.1932, *Gillett* 4324 (type in Kew Herb.).

Eleusine compressa (Forssk.) Aschers. & Schweinf. ex C. Christ. in Dansk Bot. Arkiv. 4 : No. 3, 12 (1922).

SOMALILAND : Biji, long. 44° 5′ E., lat. 10° 12′ N., 420 m., on sand hills, Oct., No. 4512. Vernac.—*Hari hari.*

Dactyloctenium aegyptium (Linn.) Beauv. Agrost. Expl. Pl. xv. 10 (1812).

SOMALILAND : Gorfulai, long. 43° 38′ E., lat. 10° 16′ N., 540 m., infl. green, Nov., No. 4561. Vernac.—*Sudaho.*

D. scindicum Boiss. Diagn. Pl. Or. Nov. Sér. 2, 4 : 131 (1859).

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., Sept., No. 3903. Vernac.—*Sudaho, Sudeh.*

Tripogon abyssinicus Nees ex Steud. Syn. Pl. Glum. 1 : 301 (1854).

SOMALILAND : Jebel Wotni Mt., long. 45° 6′ E., lat. 10° 18′ N., c. 390 m., anthers purple, Jan., No. 4800.

Enneapogon cenchroides (Licht.) C. E. Hubbard in Kew Bull. 1934 : 119.

SOMALILAND : Barataga, long. 44° 1′ E., lat. 10° 5′ N., 660 m., Oct., No. 4526. Buramo, long. 43° 10′ E., lat. 10° N., c. 1,410 m., Jan., No. 4870.

E. elegans (Nees) Stapf in Kew Bull. 1907 : 224.

SOMALILAND : Hargeisa, long. 44° 1′ E., lat. 9° 33′ N., 1,290 m., Sept., No. 4013. Ohob Pass, long. 43° 13′ E., lat. 10° 11′ N., 1,200 m., Feb., No. 4946.

E. scaber Lehm. Pugill. 3 : 41 (1831).

SOMALILAND : Ali Wein Mt., long. 45° 15′ E., lat. 10° 24′ N., 300 m., Jan., No. 4823.

Ehrharta abyssinica Hochst. in Flora, 38 : 193 (1855).

ABYSSINIA : Kondudo Mt., 42° 20′ E., lat. 9° 27′ N., 2,700 m., Feb., No. 5216.

Phalaris arundinacea Linn. Sp. Pl. 55 (1753).

ABYSSINIA : Gara Mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,580 m., Mar., No. 5356.

Aeluropus lagopoides (Linn.) Chiov. in Ann. Istit. Bot. Roma, 8 : 375 (1908).

SOMALILAND : Berbera, forming large mats, Jan., No. 4741. Vernac.—*Garo.*

Poa leptoclada Hochst. ex A. Rich. Tent. Fl. Abyss. 2 : 422 (1851).

ABYSSINIA : Gara Mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,520 m., Mar., No. 5288. Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,220 m., Mar., No. 5408.

Bromus adoënsis Hochst. ex Steud. Syn. Pl. Glum. 1 : 326 (1854).

ABYSSINIA : Gara Mulata Mt., long. 41° 45′ E., lat. 9° 15′ N., 3,000 m., bracts of infl. green and purple, Mar., No. 5370.

Brachypodium flexum Nees Fl. Afr. Austr. 456 (1841).

ABYSSINIA : Gara Mulata Mt., long. 41° 48′ E., lat. 9° 12′ N., 2,700 m., Mar., No. 5302.

var. *abyssinicum* Hochst. in Schimper. It. Abyss. Sect. 2, No. 674 (1842).

ABYSSINIA : Yuka, long. 41° 40′ E., lat. 9° 25′ N., 2,100 m., Mar., No. 5412.

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PLATE IV.

SIR WILLIAM JACKSON HOOKER,
K.H., F.R.S.

Director of the Royal Botanic Gardens, Kew,
from 1841 to 1865.

(From the crayon drawing by Sir David Macnee, P.R.S.A., in the Kew Herbarium.)

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